Vol. XVI. SEPTEMBER, 1895. No. 9.

PUBLISHED MONTHLY AT $3 A YEAR. SINGLE COPIES, 30 CENTS.

THE JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES

EDITED AND PUBLISHED BY

RUSH SHIPPEN HUIDEKOPER, Veterinarian (Alfort),

W. A. CONKLIN, PH.D., D.V.S., A. W. CLEMENT, D.V.S.,

W. HORACE HOSKINS, D.V.S., H. D. GILL, V.S.

CONTENTS.

ORIGINAL ARTICLES:

Experiments with Tuberculin on Non-tuberculous Cows. By JAMES LAW, F.R.C.V.S. 537

Report on Vital Statistics, Virginia State V. M. A. By E. P. NILES, D.V.M. . 553

Address. By Dr. W. H. HARBAUGH, President Virginia State V. M. A. . . 561

A Suggestion or Aid to the Eradication of Tuberculosis by a Practical and Profitable Method. By A. S. HEATH, M.D., V.S. 573

Necrology 576

REPORTS OF CASES:

I. Hæmatosalpinx and Hæmatometra in a St. Bernard Dog. II. Pyosalpinx in a Dog; Autopsies. By Dr. SPENCER 577

Unusual Complication Attending Septicæmia Following Parturition; Autopsy. By M. O'M. KNOTT, V.S. 578

Imperforate Anus with False Opening: Anus Vulvalis. By J. T. DUNCAN, M.D., V.S. 580

I. Fracture of the Trapezium, or Rupture of One of the Tendons Attached to that Bone. II. Peritonitis. By Drs. MARSHALL and DIXON 582

The Use of Pyoctanin in Treatment of Quittors. By Dr. WILFRIED LELLMANN 583

CORRESPONDENCE 586

LEGISLATION—Massachusetts—New York State Board of Medical Examiners . 593–597

EDITORIALS 602

PERSONALS 603

SOCIETY MEETINGS AND PROCEEDINGS:

U. S. V. M. A.—Keystone Veterinary Medical Association—Pennsylvania Alumni Association of the American Veterinary College—Wyoming Valley Veterinary Medical Association—Missouri State Veterinary Medical Association—Pennsylvania State Veterinary Medical Association—New York State Veterinary Medical Association—Iowa State Veterinary Meeting—Wisconsin Society of Veterinary Graduates—California State Veterinary Medical Association . 604–609

AMONG THE COLLEGES:

Ohio Veterinary College—Ontario Veterinary College—Veterinary Department, Detroit College of Medicine—National Veterinary College—Chicago Veterinary College—American Veterinary College 609–611

ALL COMMUNICATIONS AND PAYMENTS SHOULD BE ADDRESSED TO

Dr. W. Horace Hoskins, 3452 Ludlow Street, Philadelphia, Pa.

Copies may be had in London of Baillière, Tindall & Cox.

TWELVE PAGES OF READING MATTER EXTRA THIS MONTH.

☞ . . . "Our thanks are especially due to Dr. W. L. Zuill for his translation of Friedberger and Fröhner's unequalled work on the **PATHOLOGY AND THERAPEUTICS OF DOMESTIC ANIMALS.** . . . I do not think it extravagant to say that this translation gives to the English-reading veterinarian an opportunity to acquire a scientific and rational knowledge of his profession such as has never before been possible." (See page 572 of this Magazine).—*From the address of President* W. W. HARBAUGH, *before the Virginia State Veterinary Medical Association, June 18, 1895.*

A FEW RECENT LETTERS RECEIVED REFERRING TO

FRIEDBERGER & FRÖHNER'S

PATHOLOGY AND THERAPEUTICS OF DOMESTIC ANIMALS

Translated by PROF. W. L. ZUILL, M.D., D.V.S.,

DEAR DR. ZUILL: **Board of Agriculture,** LONDON, S. W., ENG., May 3, 1895.

I feel so much indebted to you for the copy of your translation of Friedberger and Fröhner's *Pathology and Therapeutics of the Domestic Animals* that I scarcely know how to express my thanks. The second volume arrived first, and the first while I was away on a short holiday after Easter. I have not had time to go through the whole of it, but, from what I have read, I consider it a very valuable addition, I may say a new departure in veterinary literature in the English language. It is well up to the most recent investigations as regards the pathology of animal diseases, and will prove of the greatest service alike to the teachers and students in our veterinary schools. I am very much pleased with some of your additions to the original, which I see bracketed and initialed.

In conclusion I must congratulate you on the very readable translation you have made. The text reads as if it might have been written in English originally, and not translated from a foreign language. I shall not fail to bring it under the notice of my friends, not only in the veterinary profession, but also to medical men, for I find many of them know so little of the diseases of animals that I feel assured it would often be useful to members of the medical as well as the veterinary profession. Again thanking you, believe me, Yours very truly, W. DUGUID.

W. L. ZUILL, ESQ.: **Royal (Dicks) Veterinary College,** EDINBURGH, April 15, 1895.

Dear Sir: Please accept my warmest thanks for the two handsome volumes you have sent me. I received them some short time ago, and have given them both a good look through, and I have no hesitation in saying that it is the best work on Comparative Veterinary Medicine we have in the English language; and evidence of my appreciation is that I promise you to adopt it as a text-book, announce it in our prospectus, and recommend it to my students as soon as you give me the name of an English publisher who can supply it. Again thanking you, I am

Yours sincerely, J. R. U. DEWAR.

DEAR DR. ZUILL: **Board of Agriculture,** LONDON, S. W., ENG., May 1, 1895.

In sending the enclosed acknowledgment, I cannot refrain from expressing my admiration of the work which I have only partly read.

There is a remarkable terseness in the descriptions which is so essential in a book of this kind, and I should not be surprised if it should become very popular as a text-book in our veterinary colleges. Yours very truly, G. T. BROWN.

McGill University,
Faculty of Comparative Medicine and Veterinary Science,

MY DEAR DR. ZUILL: MONTREAL, January 17, 1895.

I have to thank you for a copy of Vol. I. of your translation of Friedberger and Fröhner's *Pathology and Therapeutics of the Domestic Animals.*

I wish to thank you not only for sending me the book itself, which I value highly, but I wish to thank you for the great benefits you have conferred on the profession, and teachers as well as students.

I consider that a man who places in the hands of others scientific works of high order, carefully translated, does more service to the profession than those who produce books under their own names containing but little merit. Thus I consider George Fleming one of the most valuable men to our profession, and one who has done more to promote higher education, by means of his translations of continental authors, than any of the so-called authors of this century.

I will place the work in the list of our text-books in our next calendar, and will advise it to be placed in the libraries of all our colleges as a scientific work.

Again thanking you and wishing you all the blessings of the new year,

Yours truly, D. MCEACHRAN.

Two volumes, about 600 pages each (cloth binding), $6.00 per volume net.

PUBLISHED BY PROF. W. L. ZUILL, M.D., D.V.S.

857 NORTH BROAD STREET, PHILADELPHIA, PA.

Dealers' Orders Supplied by WM. J. DORNAN, *Printer, 100 N. 7th St., Philadelphia.*

THE CHEMICAL TREATMENT FOR CONSUMPTION,

Asthma, Chronic Bronchitis, Tubercular Laryngitis and Catarrh

INSTITUTED BY W. R. AMICK, A.M., M.D., of CINCINNATI,

is supplied, to Physicians Only, by the exclusive Compounders,

THE AMICK CHEMICAL CO., 166 W. SEVENTH STREET,

Cincinnati, Ohio, U. S. A. It has been Tested, Endorsed and

ADOPTED BY THE MEDICAL PROFESSION OF ALL SCHOOLS

as the only Successful Treatment for Pulmonary Diseases.

TEST PACKAGES OF THE AMICK MEDICINES SENT FREE

of cost to Physicians Everywhere for each new Patient.

DR. AMICK'S THEORY ON WHICH THE TREATMENT IS BASED

Cost of the Medicines and other Necessary Information on Request.

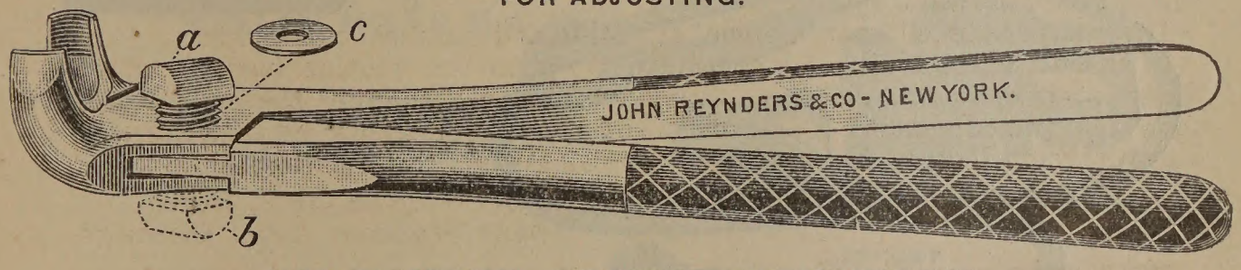
THE AMICK CHEMICAL CO.,
Manufacturing Chemists,
Cincinnati, O., U. S. A.

JOHN REYNDERS & CO.,

MAKERS AND IMPORTERS OF

SUPERIOR VETERINARY INSTRUMENTS.

NEW MOLAR FORCEPS WITH FULCRUM AND THREE WASHERS FOR ADJUSTING.

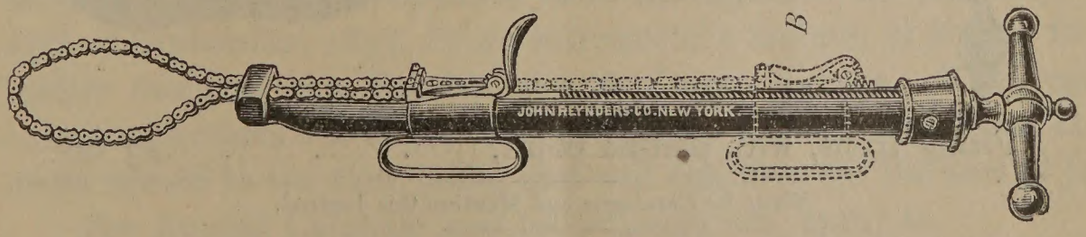


303 FOURTH AVENUE, NEW YORK.

Write for catalogue, 80 pages free.

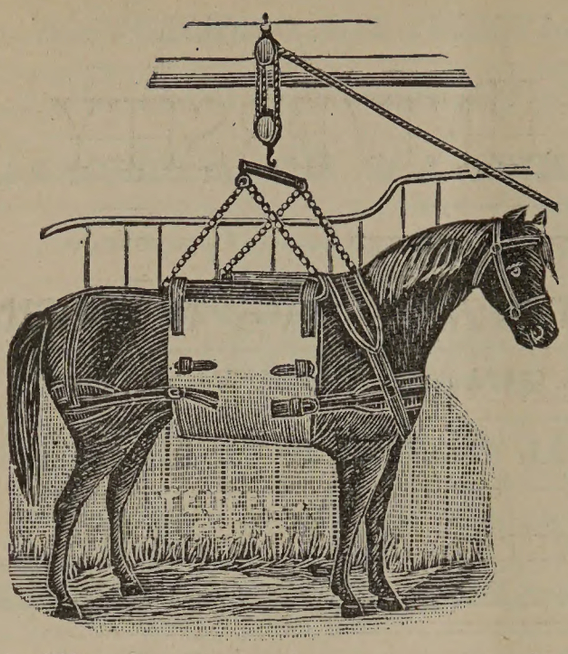
J. R. & CO.'S NEW THERMO-CAUTERY—UNEXCELLED.

Write for particulars.

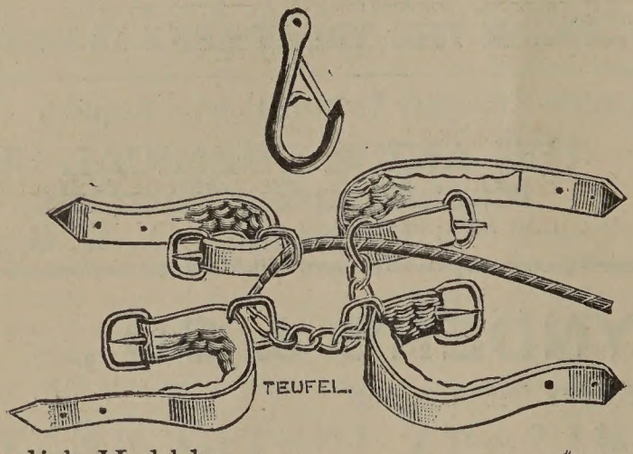


J. R. & CO.'S ANTI-SLACK ECRASEUR—The best made in the U. S.

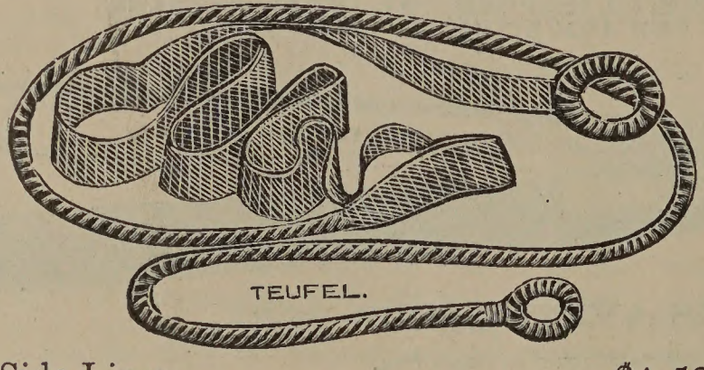
Write for J. R. & CO.'S IMPROVED EMASCULATOR.



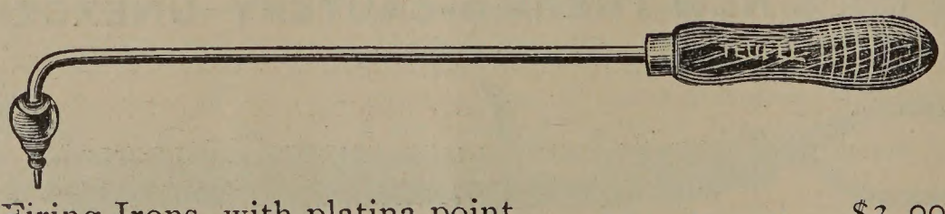
Zuill's Sling, ... $22 00



English Hobbles, . . . $12 00

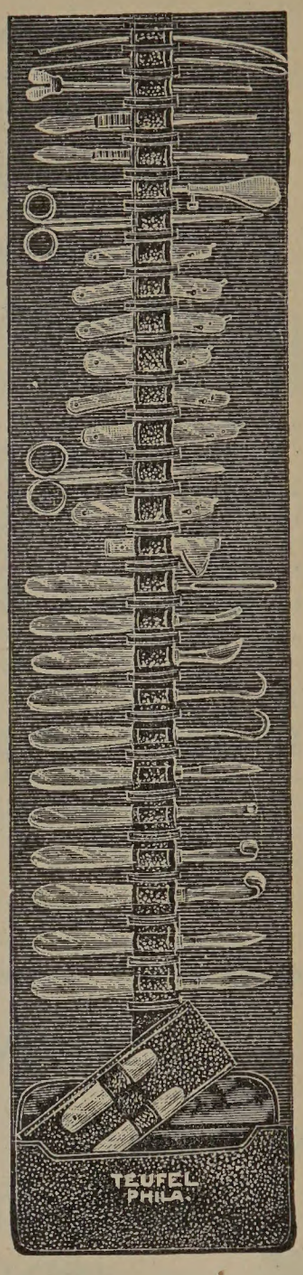


Side Lines, ... $4 50



Firing Irons, with platina point, . . . $3 00

W. L. Zuill's Aseptic Operating Case, ... $35 00



Write for Catalogue and Mention this Journal.

JACOB J. TEUFEL & BRO. { MANUFACTURERS OF VETERINARY INSTRUMENTS,

114 South Tenth Street, Philadelphia, Pa., U. S. A.

McGILL UNIVERSITY.

FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

LATE

MONTREAL VETERINARY COLLEGE.

THE PRINCIPAL (*ex-officio*):
SIR W. DAWSON, C.M.G., LL.D., F.R.S.

PROFESSORS:

D. McEACHRAN, F.R.C.V.S., Edin., D.V.S., 176 University Street.
M. C. BAKER, D.V.S., 6 Union Avenue.
CHARLES McEACHRAN, D.V.S., 6 Union Avenue

ASSOCIATE PROFESSORS:

C. F. GIRDWOOD, M.D., 54 Beaver Hall.
GEO. WILKINS, M.D., 896 Dorchester Street.
A. D BLACKADER, B.A., M.D., 236 Mountain Street.
D. P. PENHALLOW, B.Sc., Sherbrooke Street.
WESLEY MILLS, M.A., M.D., D.V.S. McGill College.

DEAN:
D. McEACHRAN.

REGISTRAR:
CHAS. McEACHRAN.

SESSION 1895-96.

The Sixth Session of the Faculty (being the thirtieth of the Montreal Veterinary College) will be opened on Tuesday, the 24th of September, 1895, by an introductory lecture, at 8 P.M., in the lecture room of the Faculty, No. 6 Union Avenue. The regular course of lectures will begin on Wednesday, 25th of September, at the hours named in the time-table, and will continue till the end of June.

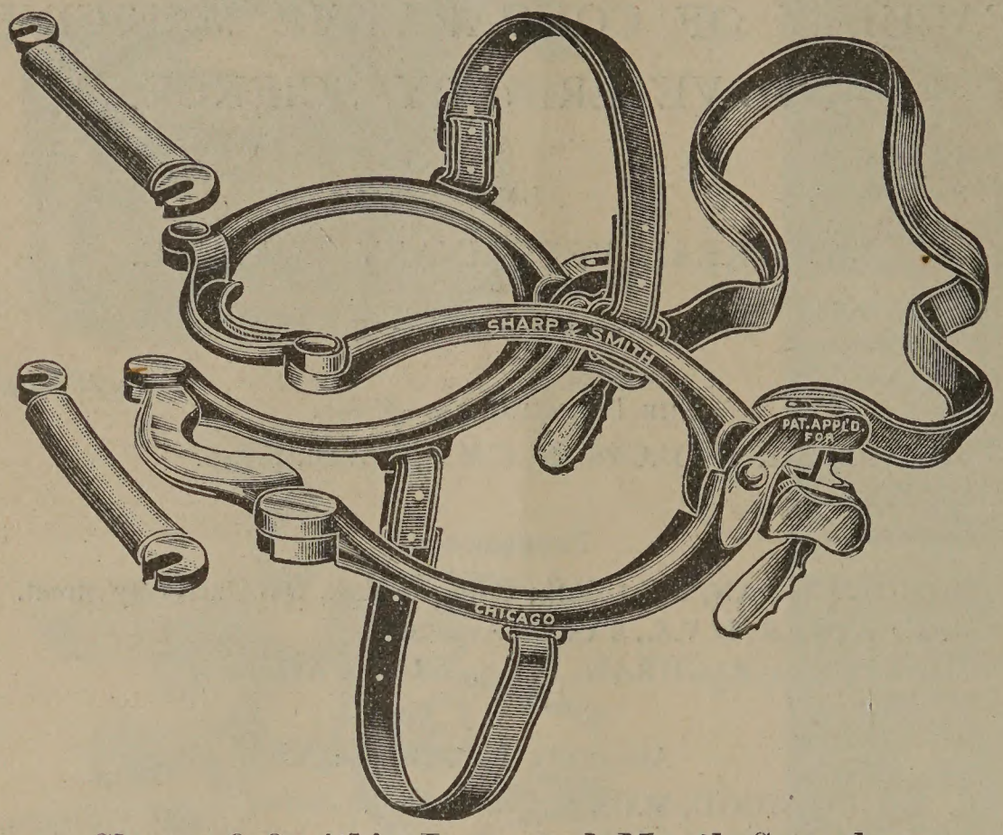
For Annual Calendar and full information, apply to

C. McEACHRAN, *Registrar.*

SHARP & SMITH,

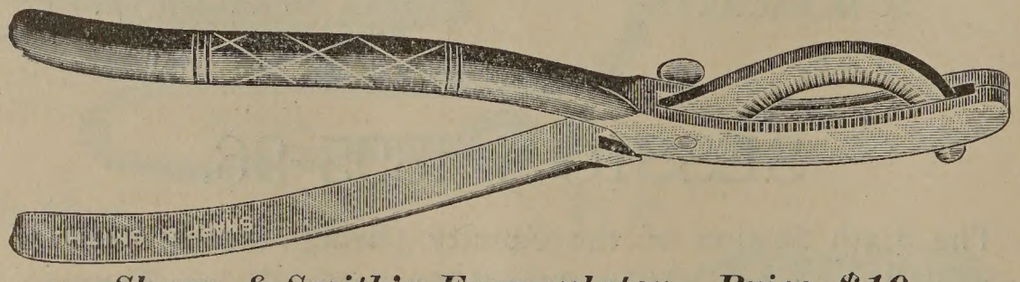
Manufacturers of VETERINARY INSTRUMENTS

73 RANDOLPH STREET, CHICAGO.

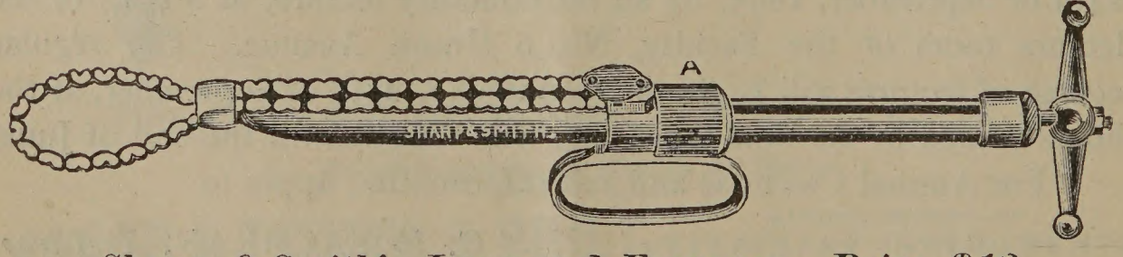


Sharp & Smith's Improved Mouth Speculum.

The teeth fit into semi-lunar cups so made that they will fit any mouth, and when placed in the mouth like a bit, can be opened instantly. It is also provided with bars to take the place of the cups when operations are to be made on the incisor teeth. ***Price, $10.***

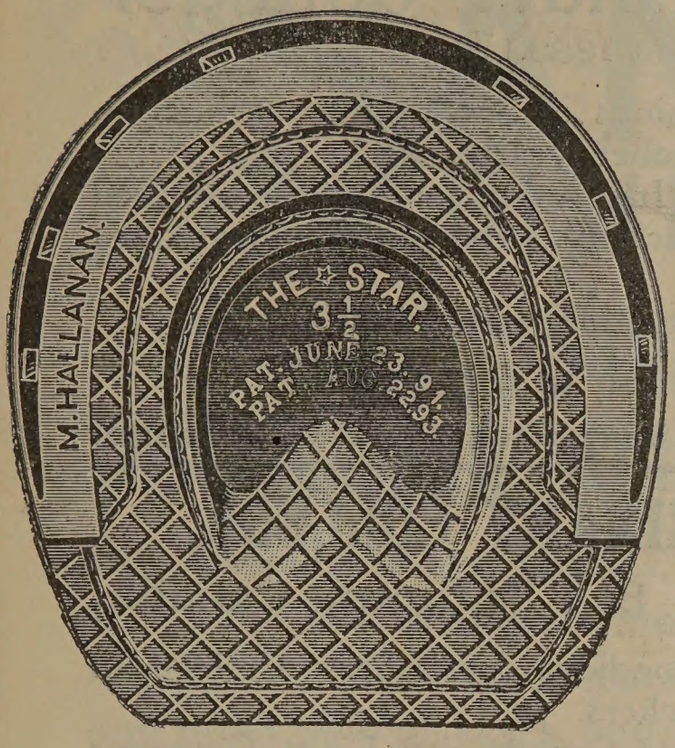


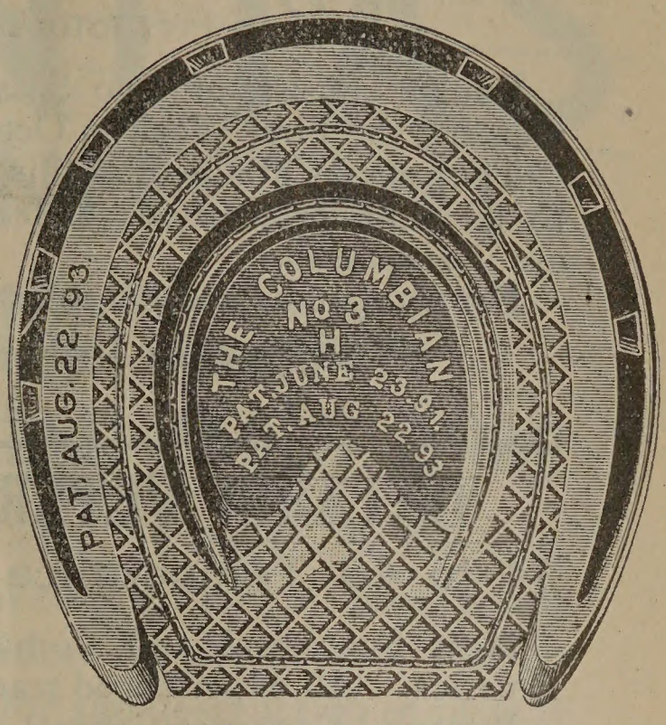
Sharp & Smith's Emasculator. Price, $10.



Sharp & Smith's Improved Ecraseur. Price, $12.

THE HALLANAN VULCANIZED RUBBER HORSESHOE PAD





A Mechanical Production Combining a Rubber Pad with Canvas Firmly Secured to a Sole-leather Back.

By this means securing for the horse an even distribution of the weight over the entire solar surface of the foot.

It does away with the necessity of heel and toe calkings.

It permits the use of a lighter shoe with narrower web, and thus enables the shoer to maintain closer adjustment of the shoe to the crust of the foot, while the pad, made of rubber, lessens the concussion and jar, and at the same time divides the force and weight over the entire ground surface.

A full shoe is allowed by its use, and the objection of too much direct heel pressure avoided.

It does away with the need of sharpening in winter weather and gives confidence to the horse on icy pavements. Where asphalted streets exist it is a safeguard from slipping and the severe strain from concussion.

For weak, contracted, or low-heeled feet they, while aiding the removal of these defects, enable constant use of the animal.

These pads will last from two to three months. They have met with the approval of many of the most prominent veterinarians, horsemen, and horse owners in New York, Brooklyn, Philadelphia, and wherever placed before the public.

For testimonials and any other information, write or call upon

M. HALLANAN,

Inventor, Patentee and Manufacturer,

190 West 4th St., New York City.

Chicago Veterinary College.

(Founded 1883.)

Course consists of Two Sessions of Six Months each, commencing the First Week in October, yearly.

The success attained by this Institution can only be ascribed to its superior methods of teaching. Its clinical advantages are unsurpassed.

For prospectus and full information, address the Secretary,

JOSEPH HUGHES, M.R.C.V.S.,
2537-39 State St., Chicago.

ONTARIO VETERINARY COLLEGE,

44 to 46 Temperance St., Toronto, Canada.

Most Successful and Commodious Veterinary College in America. All experienced teachers.

Patrons—Governor-General of Canada and Lieut.-Governor of Ontario.

Session begins October 16, 1895. Apply to Principal,

ANDREW SMITH, F.R.C.V.S.,
Toronto, Canada.

FORDHOOK KENNELS and POULTRY YARDS.

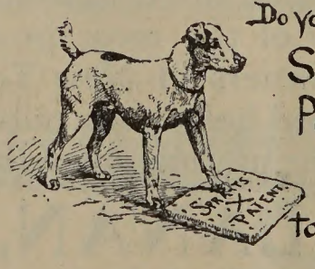
ROUGH-COATED SCOTCH COLLIES.

TWENTY-TWO BREEDS OF POULTRY.

Our Kennels are among the largest in America, devoted exclusively to the breeding of Collies and embrace the best blood in England and America.

Our manual of Thoroughbred Live Stock, describing our Poultry, Collies, etc., mailed free on application.

Address, **W. ATLEE BURPEE & CO., PHILADELPHIA, PA.**



Do You Keep A Dog?
Send for Pamphlet (gratis) on Diseases etc.
to SPRATTS PATENT (AM.) LTD.,
241 E. 56 St., N.Y.

WELLCOME INSTITUTE LIBRARY

	WelMOmec

SANITAS
DISINFECTANTS

USE: "Sanitas"

Disinfecting Animal (Soft) Soap

For washing Dogs, Horses, etc. It improves the hair, keeps the skin healthy, removes scurf and all unpleasant odors. An effective preparation for the cure of mange and other skin diseases, and for the destruction of insects on animals. An invaluable application for cracked heels.

"SANITAS" DISINFECTING VETERINARY OINTMENT

Prevents and cures mange. Invaluable for wounds, sores, galls, sprains and broken surfaces.

"SANITAS" CRUDE DISINFECTING LIQUID, AND "SANITAS" DISINFECTING SAWDUST

Will keep kennels and stables perfectly free from offensive smell and in a thoroughly sanitary condition.

NUMEROUS GOLD AND SILVER MEDALS.
THREE MEDALS AWARDED AT THE WORLD'S FAIR, CHICAGO.

The American and Continental "Sanitas" Company, Ltd.,

636 to 642 West 55th Street, NEW YORK CITY.

AGENTS { E. E. HILLS, 70 State St., Chicago.
E. D. SMART, 202 South St., Baltimore.
M. C. BYERS, 97 Ottawa St., Grand Rapids, Mich.

A PARTIAL LIST OF

STANDARD VETERINARY BOOKS

PUBLISHED BY

WILLIAM R. JENKINS,

851 & 853 SIXTH AVENUE (48th Street), NEW YORK.

Manual of Veterinary Medicine and Surgery. By Edward Courtney, V.S. 8vo., cloth $2 75

Veterinary Obstetrics. By Dr. George Fleming. With 212 illustrations. 8vo., cloth 5 00

Operative Veterinary Surgery. Part I. By Dr. George Fleming. 8vo., cloth, illustrated 2 75

Parasites and Parasitic Diseases of the Domesticated Animals. By Prof. L. G Neumann. Translated and edited by Dr. George Fleming. 8vo., cloth, 873 pages, 365 illustrations 7 50

Manual of the Theory and Practice of Equine Medicine. By Drs. J. B. and A. Gresswell. Second edition, enlarged. 8vo., cloth 2 75

Veterinary Pharmacopœia, Materia Medica, and Therapeutics. By Drs. George and Charles Gresswell. With descriptions and physiological actions of medicine, by Dr. Albert Gresswell. 8vo., cloth 2 75

The Stock Owners' Guide. By George S. Heatley, M.R.C.V.S. 12mo., cloth 1 25

The Management and Diseases of the Dog. By I. Woodruffe Hill, F.R.C.V.S. 12mo., cloth, illustrated . . . 2 00

Veterinary Dental Surgery. By Dr. T. D. Hinebauch. 12mo., cloth 2 00

A Manual of Veterinary Therapeutics and Pharmacology. By E. Wallace Hoare, F.R.C.V.S. 12mo., cloth 560 pages (*new*) 2 75

Animal Castration. By Prof. A. Liautard. 12mo., cloth . 2 00

Osteology. By Prof. J. McFadyean. 8vo., cloth . . 2 75

Veterinary Microbiology. By Prof. Mosselman and Lienaux. Translated by Prof. R. R. Dinwiddie. 12mo., cloth, 342 pages 2 50

Veterinary Hygiene. By Capt. F. Smith, M.R.C.V.S. Cloth 3 25

Veterinary Anatomy. By Dr. Strangeway. Cloth . . 5 00

Principles and Practice of Veterinary Medicine. By Prof. W. Williams. (English edition) 6 00

Principles and Practice of Veterinary Surgery. By Prof. W. Williams. (English edition) 6 00

Any of these books will be sent *post-paid* on receipt of price; also complete catalogue when desired.

WILLIAM R. JENKINS,

851 and 853 Sixth Avenue - - - New York

THE JOURNAL
OF
COMPARATIVE MEDICINE AND
VETERINARY ARCHIVES.

VOL. XVI. *SEPTEMBER*, 1895. NO. 9.

EXPERIMENTS WITH TUBERCULIN ON NON-TUBERCULOUS COWS.

BY JAMES LAW, F.R.C.V.S.,
ITHACA, N. Y.

ON October 28, 1894, the following cows were set apart for this experiment: Two Holstein cows and one Jersey in full flow of milk, being about six weeks after calving, and two dry farrow cows of common stock, one pointing to a short-horn ancestry and the other to a Devon one. Meanwhile observations on the milk of three other cows, two Holsteins and a Jersey, about the same length of time after calving, afforded a fair comparison between cows treated with tuberculin and others under similar conditions but without such treatment.

The first five cows to be tested with tuberculin, each received, in proportion to its size, a full dose of tuberculin weekly, and the temperatures were taken before the injection for the normal standard and about every two hours from about the ninth to about the twentieth hour after each tuberculin injection.

TEMPERATURE. The tested animals were treated like the rest of the herd with the single exception that, in order to take the temperatures, they were tied up in the stalls for twenty-four hours on each occasion for testing, while the others were at liberty under an enclosed shed except when tied up for feeding and milking. The prolonged standing on hard boards led on each occasion to congestion of the feet of the Holstein cow Mabel, which weighed 1455 lbs., but, as this invariably took place under similar circumstances and apart from the injection

of tuberculin, the slight rise of temperature on each occasion of testing is abundantly accounted for from the condition of the feet alone. This conclusion is further confirmed by the fact that, excepting in cases in which she was turned out in the afternoon to relieve her tender feet, the temperature went on steadily increasing to the last. This was notoriously the case in the three last tests of the series (Nov. 28th, Dec. 7th, Dec. 12th). On a previous occasion Mabel had been tested in company with the entire herd and stood the test satisfactorily. Even in the present series of tests, this cow (with one exception) never rose more than two degrees above her initial temperature taken when that particular test was started, and she only rose nine-tenths of a degree above 102° F., which may be set down as the normal standard temperature of a cow in full milk, highly fed and kept indoors. Taking into account the variations in healthy cattle from one time of the day to another, this rise of less than one degree above the general standard implies nothing.

The exceptional case was on Nov. 9th and 10th, when Mabel's temperature rose to 104° and that of the short-horn grade to 104.3°. Taken by itself this test might have been misleading, but in connection with six other tests (in case of Mabel seven), made both before and after this, with the same dose of tuberculin and with no such resulting rise, it can safely be set down to accidental conditions. The real cause was not clearly made out, but it is probable that it was chargeable on exposure in a cold draught. Both cows stood on separate ranges close to the east door of the barn, through which the manure had to be forked out, and with a cold east wind entering by that door, and blowing on cattle that had been shut up in a warm building over night, a slight chill was to be expected.

The Jersey, Daisy, never rose above the normal standard of 102°, excepting in the first test, and then only to 102.3°—too little to furnish even a suggestion of tuberculosis, no higher than we find in many well-fed healthy cattle.

The Holstein, Belva, on two occasions rose to 102.5°, half a degree above the normal standard, but which is often attained to in health, and apart from the tuberculin test. Moreover, on five other tests, both before and after these, she did not show a rise over 102°, so that the less suspicion should arise from this insignificant elevation.

The Devon grade-cow in different tests had her temperature elevated to 102° and on one occasion to 102.6°, a little more

than half a degree above the normal, and which, as already said, is found in the healthiest cows.

The short-horn grade had a fever temperature on one occasion apparently from a chill, as already referred to. In her first test it rose to 102.6°, as did also the Devon grade on the same occasion. This may be explained partly by the fact that both had been driven a distance of seven miles the day previous, causing much excitement, and followed by the excitement induced by coming into a new place and herd, and among new people.

One other point should be named as affecting the temperatures of all the test animals in the early forenoon and late afternoon. The whole herd was put in the barn for feeding and milking, from five to seven in the morning and from three to six in the afternoon, so that at these hours the place was crowded and the disturbance greater. Elevations of temperature of a degree and under occurring at such time, and as repeatedly seen in the tested animals, are thus accounted for. Such elevations do not show the persistence and the slow gradations of rise and fall which we usually see in the rise caused by the tuberculin.

Taken all in all, then, there is nothing in the records of temperature that would indicate, either at the time of the test or later, that the tuberculin had proved in any way inimical to the general health. Had the health been impaired by the repeated operation of the tuberculin it might have been expected that the constitutional disturbance would have been more distinctly marked in the later tests than in the earlier ones, and as no such tendency is observable it may be safely concluded that, so far as illness can be indicated by a variation of temperature, test doses of tuberculin, in the absence of the bacillus, do not seem to produce any such illness in the healthy animal.

It has been alleged that the repeated use of tuberculin on animals slightly tuberculous abolishes the tendency to reaction under the use of this agent. If this were true, it would argue rather a curative than a malific action of the tuberculin; but in other experiments I have found the second test, made a week or more after the first, to produce a no less marked reaction, so that this alleged tolerance need not be taken into account in the cases before us.

Respiration and Pulse. As regards the record of the pulse and breathing given in the tables it is sufficient to say that they furnish no real indication of deviation from the most perfect health. In cattle pulse and breathing vary so widely under

different conditions of the environment, digestive organs, exercise, etc., that it would take very much greater variations than those given in the tables to give true indications of disease.

Milk Record. The milk record may be accepted as a more sensitive test of constitutional injury than temperature, breathing, or pulse. It is also further reaching than these other indications, as it involves a healthy exercise of all the bodily functions, and above all those of appetite, digestion, assimilation, and secretion. An appreciable disturbance of the health at any one point will usually be manifested in this delicate balance in a variation of quantity or quality of the milk.

Belva. Taking the milk record of Belva as given in Table VI., we find that the milk-yield in the twenty hours following the injection of the tuberculin shows no constant nor striking difference from that of intervening days. The highest yield per day (42.25 lbs.) was on the fifth day succeeding the third injection of tuberculin, and on each of these five days the yield was from two to five pounds above the average. The lowest yield per day (31.5 lbs.) was on the fourth day after the first injection, while the preceding day's yield had been over a pound above the average, and the two days following the injection had been respectively two and three pounds below.

What is more significant is that the average yield of milk for the days following the seven injections of tuberculin is practically the same as the average yield for the whole forty-seven days included in the experiment. This may be stated clearly in tabular form thus:

Average of the seven days following the injections of tuberculin 37.257 lbs.

Average of the forty-seven days for which the milk record is given 37.247. The difference is 0.01, and is in favor of the days when the system was charged with the dose of tuberculin.

Daisy. The milk record of Daisy given in Table VII. shows a great difference in the yield on different days, but no constant relation between the low daily yield and the days when the tuberculin was in the system. On the first, second, and fourth occasions in which the system was charged with the tuberculin the milk-yield was above the average, whereas on the third, fifth, sixth, and seventh occasions it was below. The highest daily yield (22.25 lbs.) was on the day in the evening of which the first injection of tuberculin was made, and the second highest (21.5 lbs.), only three-fourths of a pound less, was on the day after that injection. The lowest daily yield (15 lbs.) was on the

day when the last injection of tuberculin was in the system, and when besides the cow was in *heat.* This low yield was also reached on the day preceding the second last tuberculin injection (the ninth day after an injection), and also on the succeeding day when the system was charged with this second last injection. This low record could not be justly charged on the tuberculin injection, seeing that it was already reached the day before that injection.

Daisy, like the rest of the herd, was falling off in milk during the experiment, and her average when charged with tuberculin suffers on account of her having reached her lowest mark on December 7th, on the evening on which a dose of tuberculin was given, and, further, that on December 13th, the day of the last test, her milk shrank because she was in heat Taking the seven tests the averages stand thus :

Average of the seven days following the injections of tuberculin 17.82 lbs.

Average of the forty-seven days for which the milk record is given, 18.26 lbs. This shows a difference of less than half a pound daily on the average against the tuberculin. If we leave out the last injection (Dec. 13th), when the cow was in heat, we find that the average yield per diem for the six days during which the cow was charged with tuberculin is slightly above the average for the whole forty-seven days of the trial.

Molly, Freda, and Bertha. These cows were not injected with tuberculin, and their milk records have been introduced to show that the daily oscillations in the yield and its progressive diminution in the main during the forty-seven days was common to the whole herd, and in no sense peculiar to the three cows that had been treated with tuberculin. The gradual failure can be seen in the tables. It may be more clearly shown by placing side by side the general average for the first four weeks and the average for the last two weeks and five days.

Average for first twenty-eight days :

Belva	Molly	Freda	Daisy	Bertha
lbs.	lbs.	lbs.	lbs.	lbs.
38.10	41.31	43.51	19 23	28.46

Average for last nineteen days :

Belva	Molly	Freda	Daisy	Bertha
lbs.	lbs.	lbs.	lbs.	lbs.
36.00	42.87	40.51	16.76	26.13
—2.10	+1.56	—3.00	—2.47	—2.33

Molly has gone on improving, but the others show a very decided falling off, which is greater in the non-injected Freda than in the injected Daisy, and greater in the uninjected Bertha than in the injected Belva.

Oscillations. The variations above and below the general average for each animal injected and not injected with tuberculin will be very clearly seen by glancing at the tables giving the graphic illustration for two Holsteins and two Jerseys (Tables VIII. and IX.). In figures they may be shown as follows:

Belva. General average per day 37.247 lbs. Highest per day 42.25 lbs. Lowest per day 31.50 lbs.

Freda. General average per day 41.78 lbs. Highest per day 47.50 lbs. Lowest per day 34.50 lbs.

Daisy. General average per day 18.26 lbs. Highest per day 22.25 lbs. Lowest per day 15 lbs.

Bertha. General average per day 27.01 lbs. Highest per day 33.5 lbs. Lowest per day 23 lbs.

Molly. General average per day 41.19 lbs. Highest per day 48 lbs. Lowest per day 33.5 lbs.

The extremes, it will be observed, were actually greater for the cows that were not treated with tuberculin than for those so treated Among the Holsteins, Belva had a variation amounting to 10.75 lbs., Freda one of 13 lbs., and Molly one of 14.5 lbs. Among the Jerseys, Daisy had a variation of 7.25 lbs. and Bertha one of 10.5 lbs. Extreme variations in the yield of milk then cannot be charged on the action of a test dose of tuberculin injected into a healthy animal, nor of a series of such test doses administered at intervals of a week.

Percentage of Butter-fats in the Milk. Before dismissing the milk it is desirable to consider how the ratio of butter-fats is affected by repeated test doses of turberculin injected into a healthy animal. A study of the tables given below will fail to establish any connection between the presence of a test dose of the tuberculin in the animal body and any increase or diminution of the fat in the milk. The Holstein Belva had her highest percentage of butter-fat (3.6) October 20th, ten days before the first injection of tuberculin. Her next highest record (3.4) was Dec. 8th, while under the action of tuberculin. Her lowest record (2.8) was Dec. 1st, two days after the operation of a dose of tuberculin. Her variation (0.8) is only a little more than that of the untreated cow Freda (0.6), and only about half that of Molly (1.5). The Jersey Daisy also made her highest percentage (5.6) October 20th and her lowest (4.8) December 8th, when

under the action of tuberculin. But she made her second highest (5.55) Nov. 10th, when under tuberculin, and an equal record Nov. 17th, two days after the operation of a dose of tuberculin. Her greatest variation was 0.7 per cent., whereas that of the untreated cow Bertha was 1.15 per cent.

There is therefore no change in the percentage of butter-fats sufficient to indicate any disease or ill-health as the result of the administration of repeated test doses of tuberculin.

Effect on Body-weight. The weight of the animals varied so little during the experiment that it might be said to have remained stationary. The record is as follows :

October 30th.	Dec. 1st.	Dec. 13th.	Jan. 5, 1895.
Belva, 1264 lbs.,	1305 lbs.,		1405 lbs.
Mabel, 1455 "	1540 "		1570 "
Daisy, 945 "	950 "		965 "
Short-horn Grade,	1020 "	1020 lbs.,	1025 "
Devon Grade,	895 "	915 "	910 "

Considering that a variation of 50 lbs. in the weight of a cow may occur in a few hours according as it is taken before or after feeding and watering or milking, there may be said to have been no change excepting in the case of the two Holsteins, in which there is shown a gain of 141 lbs. and 115 lbs., respectfully. It is worthy of notice that the last weighing, which makes the highest record, was made three to four hours after the morning feeding, and (in the case of the three first cows) of the morning milking. The two dry cows had been watered but had not been fed on the morning of the last weighing, as they were just about to be killed.

It may be concluded that the repeated test doses of tuberculin had in no injurious way affected assimilation, and that in the two Holstein cows it had not prevented a perceptible improvement in this repect.

Post-mortem Examinations. To complete the record the two farrow cows were killed Dec. 5, 1894, and subjected to careful necropsy. In the main the viscera were sound. The short-horn grade had pus in each of the left quarters of the mammary gland in the milk sinus, the walls of which were red and thickened. When stained and placed under the microscope, the pus showed numerous cocci but no bacilli.

As is usual in old cows, the groups of lymphatic glands in the intermaxillary and pharyngeal regions, in the chest, the abdomen, the subcutaneous and intermuscular regions were pigmented, of a dark grayish color, varying at different points, but in

no case showing molecular degeneration, coagulation-necrosis (caseation), nor even perceptible congestion. In the short-horn grade the lymphatic glands behind the diseased mammæ were considerably enlarged.

Experiments at the U. S. Bureau of Animal Industry. In the "investigations concerning bovine tuberculosis, 1894," Dr. de Schweinitz records the effect on the milk of two healthy cows, one of which received one dose and the other three successive doses of tuberculin. The dose on each occasion was 2 c.c. for each cow, and, as they were common stock, it may be inferred that it was a full dose considering the probable weight of the animals.

Of variations in temperature it is enough to say that there was no more than would occur in the best of health. The analysis of the milk is given in Table XII., from which it will be seen that the single test of cow No. 113 there was a slight reduction of the total solids and of the different constituents, such as sugar, albuminoids, and fat. The second cow, No. 217, tested three times under tuberculin and once on five successive days without tuberculin, gives a more trustworthy basis for estimating the effect of that agent. It will be observed that on April 1st under the tuberculin there was a slight decrease of the total solids (0.45), on April 13th under tuberculin a still larger decrease (1.26), but on June 5th under tuberculin there was an increase (1.01). On June 11th to 15th without tuberculin there was a variation in the total solids of 1.99.

Then, as to the milk sugar, 217 showed a percentage reduction of 0.1 April 1st under tuberculin and of 0.61 April 13th, but no change whatever June 5th, though again under tuberculin, and no change June 11th to 15th without tuberculin.

Of albuminoids, 217 showed a percentage reduction of .07 April 1st under tuberculin, but an increase of 0.13 April 13th and 0.61 June 5th. In the absence of tuberculin it showed a variation of 0.42 June 11th to 15th.

In fat, No. 113 had a decrease in her single test, while 217 had an increase in all cases under tuberculin 0.31 April 1st, 0.13 April 13th, and 0.86 June 5th. In the entire absence of tuberculin, June 11th to 15th, she showed a variation of 0.51.

With such a testimony it would be disingenuous to claim any constant or appreciable variation as the result of the injection of a test dose of tuberculin into a healthy animal, even if such dose were repeated several times. So far as there is evidence before us, everything points to the harmlessness of a single test dose on a sound animal system.

TABLE I. ACTION OF TUBERCULIN ON HOLSTEIN COW BELVA, IN FULL MILK (calved September 16, 1894).

Before injection.						After injection.																				
Date, 1894.	Normal temp.	Resp.	Pulse.	Dose.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Hour.
Oct.				m.	P. M.				A. M.				A M.				A. M				P. M.				P. M.			P. M.
30–31	101°	...	...	30	9.45	102.1°	...	...	6.45	101.5°	30	72	9.15	101.5°	30	60	11.25	102.3°	15	...	1.45	101.9°	20	69	4.15	102°	...	6.45
Nov.																												
9–10	101.3	...	...	30	10.00	101.8	16	...	7.00	100.2	13	...	9 30	101.5	...	...	11.30	101 7	17	...	2.00	101.4	18	...	4.00	101	20	6.30
14–15	101.0	15	...	30	10.30	101.6	18	..	7.30	100.8	16	...	9.30	101.2	16	...	11.30	101.5	15	...	1.00	101.8	13	...	3.00	102.5	20	5.00
					A. M.				P. M.				P. M.				P. M											
23	101.0	24	...	30	7.00	101.5	16	...	2.30	101.6	21	...	4.00	101.5	17	...	7.00	101.0	15	...	10.00							
					P. M.				A. M.				A. M.				A. M.											
28–29	100.0	13	...	30	10.15	101.8	18	...	7.00	100.5	14	...	9.15	101.0	16	...	11.45	101.9	20	60	2.00	102.5	14	...	4.00			
Dec.																	P. M.											
7–8	101.5	20	...	30	10.30	101.9	21	72	7 30	100 4	12	72	10.00	100.9	20	60	12.10	101.8	16	66	3.00	101 6	20	...	4.45			
12–13	100.8	20	63	30	10.30	101.5	16	...	7.15	101.4	16	...	10.15	101.3	16	60	12.15	101.6	18	...	2.15	101.7	...	...	4.30	Was in heat Dec. 11th.		

TABLE II. ACTION OF TUBERCULIN ON HOLSTEIN COW MABEL, IN FULL MILK (calved October, 1894).

Before injection.						After injection.																							
Date, 1894.	Normal temp.	Resp.	Pulse.	Dose.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.
Oct				m.	P. M.				A. M.				A. M.				A. M.				P. M.				P. M.				P. M.
30–31	100.9°	...	...	31	9.45	100.9°	...	...	9.45	102.6°	28	...	9.15	102.9°	42	72	11.25	102.6°	32	...	1.45	102.2°	26	72	4.15	101.5°	...	6.45
Nov.																													
9–10	101.4	...	...	31	10.00	102.8	18	...	7.00	104.0	22	..	9.30	102 8	26	...	11.45	102.6	18	...	2.00	101.7	22	...	4 00	101.5	19	6.30
14–15	101.0	23	...	31	10.30	101.5	18	...	6.46	101.9	16	...	8.30	101.8	18	...	11.15	102.0	18	...	1.00	102.2	21	...	3.00	102.0	20	5.00
					A. M.				P. M.				P. M.				P. M.											
23	101.9	22	...	31	7.00	102	18	...	2 30	102.5	21	...	4.00	102.2	24	...	7.00	102.0	22	...	10.00							
					P. M.				A. M.				A. M.				A. M.											
28–29	101.5	14	...	31	10.15	102	21	...	7.00	100.9	16	...	9.15	101.9	14	...	11.45	101.7	14	...	2.00	102.2	18	...	4.00	102.5	24	5.20
Dec.																	P. M.											
7–8	101.4	18	...	31	10.30	102	20	...	7.30	101.6	24	...	10.00	102.3	20	...	12.10	102.8	16	...	3.00	102.6	12	...	4.45			
12–13	102.0	24	63	31	10.30	102.6	18	...	7.15	102.6	24	...	10.15	102.9	16	60	12.15	103.2	31	...	2.15	103.0	...	...	4.30	Feet sore from standing on boards.		

TABLE III. ACTION OF TUBERCULIN ON JERSEY COW DAISY (calved September 12, 1894).

Before injection.						After injection.																							
Date, 1894.	Normal temp.	Resp.	Pulse.	Dose.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.
Oct.				m.	P. M.				A. M.				A. M.				A. M.				P. M.				P. M.				P. M.
30–31	101.0°	...	...	26	9.45	101.8°	...	...	6 45	101.5°	30	72	9.15	101.5°	30	60	11.25	102.3°	15	...	1.45	101.9°	20	69	4.15	102°	...	6.45
Nov.																													
9–10	101.0	...	...	26	10.00	101.6	24	72	7.00	100.8	12	...	9.30	101.2	17	...	11.45	101.7	20	...	2.00	101.8	22	...	4.00	101.2	18	6.30
14–15	100.8	21	...	26	10.30	101.8	23	...	6.45	100.9	9	...	9.30	101.0	16	...	11 15	101.0	17	...	1.00	101.2	22	...	3.00	101.7	20	5.00
22–23	101.0	18	72	26	10.20	101.5	21	...	7.00	101.0	15	66	9.30	100.8	15	...	11.30	101.3	15	...	2.30	101.5	1	...	4.00	101.3	24	7.00
																										101.4	...	10.10
28–29	101.0	15	...	26	10.15	101.7	15	...	7.00	100.5	16	...	9.15	100.5	18	...	11.45	101.2	14	48	2.00	101.0	14	...	3.00	101.5	...	5.20
Dec.																	P. M.												
7–8	101.5	27	...	26	10.30	101.8	30	54	7.30	100.9	18	62	10.00	101.3	22	68	12.10	101.0	20	60	3.00	101.8	16	...	4.45				
12–13	101.3	29	66	26	10.30	101.7	16	...	7.15	100.3	18	60	10.15	100.7	30	60	12.15	101.8	30	...	2 15	101.8	...	...	4.30	In heat: took bull.			

TABLE IV. ACTION OF TUBERCULIN ON GRADE SHORT-HORN COW; NEARLY DRY; FARROW.

Before injection.						After injection.																							
Date, 1894.	Normal temp.	Resp.	Pulse.	Dose.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.
Nov.				m.	A. M.				P. M.				P. M.				P. M.				P. M.				P. M.	°			P. M.
3	100.8°	...	...	28	6.30 P. M.	101.2°	20	...	2.00 A. M.	102.3°	17	...	4 00	102.6°	...	...	5.15 A. M.	102°	21	48	7.00	101.3°	13	45	9.00	101.5	42	48	10.15
9-10	102.7	...	...	29	10 00	104.3	30	72	7.00	103 7	22	...	9.15 A. M.	103.8	17	...	11.20	102.8	18	..	2.00	103.0	22	...	4.00	101	16	...	6.45
14-15	101.0	16	54	28	10.30	101.0	20	48	7.00	101.7	20	56	9.30	101.0	18	50	..... A. M.	101.5	13	42	1.00	101.5	16	54	3.00	102	16	54	5.00
22-23	100.6	21	...	28	10.20	100.8	25	...	7.00	102.0	25	54	9.30	102.0	15	60	11.30	101.6	18	60	2.30	102.4	20	48	4.00				
28-29 Dec.	101.0	16	43	28	10.15	101.3	20	44	7.00	102.0	16	48	9.15	101.9	15	48	11 45 P. M.	101.5	18	52	2.00	101.5	16	46	4.00	102	...	...	5.20
7-8	101.5	22	48	28	10.30	100.5	23	50	7.30	101.0	22	42	10.00	101.3	16	58	12.10	102.0	16	52	3.00	101.6	18	...	4.45				
12-13	101.6	30	60	29	10.30	101.9	18	...	7.15	102.3	17	52	10.15	101.7	18	52	12.15	101.8	23	...	2.15	101.8	...	..	4.30				

TABLE V. ACTION OF TUBERCULIN ON GRADE DEVON COW; DRY; FARROW.

Before injection.						After injection.																					
Date, 1894.	Normal temp.	Resp.	Pulse.	Dose.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.	Temp.	Resp.	Pulse.	Hour.
Nov.				m.	A. M.				P. M.				P. M.				P M.				P. M.				P. M.	°			P.M.
3	101.5°	...	...	28	6.30	101°	18	...	2.00	102.3°	17	...	4.00	102.6°	18	...	5.15°	102.6°	14	70	7.00	101.9°	14	64	9.00	101.8	15	64	10.15
					P. M.				A. M.				A. M.				A. M.												
9–10	101.7	...	.	27	10.00	101.8	24	60	7.00	102.1	12	...	9.15	102.2	11	...	11.20	101.4	16	...	2.00	101.4	14	...	4.00	101.5	14	...	6.45
14–15	101.5	18	62	26	10.30	102.2	22	48	7 00	102.2	18	50	9.30	102.2	12	46	.....	101.3	14	48	1.00	101.7	16	40	3.00	101.8	24	48	5.00
																	A. M.												
22–23	100.2	14	...	27	10.20	101.0	15	...	7.00	102.0	11	48	9.30	102.0	18	44	11.30	101 8	18	48	2.30	101.5	12	40	4.00				
28–29	101.2	11	50	27	10.15	102 0	16	42	7.00	101.2	11	42	9.15	102.2	10	42	11 45	101.2	14	48	2.00	101.0	18	46	4.00	101.0	...	...	5.20
Dec.																	P. M.												
7–8	101 5	16	60	27	10.30	101.8	23	60	7.30	102.3	24	60	10.00	102.0	16	58	12 10	101 8	16	54	3.00	101.6	14	...	4.45				
12–13	101.0	13	48	27	10.30	101.7	14	43	7.15	101.1	17	48	10.15	101.3	14	44	12.15	101.5	16	...	2.15	101.6	...	...	4.30				

TABLE VI. MILK RECORD OF BELVA FOR THE PERIOD OF THE TUBERCULIN TEST, AND OF TWO OTHER HOLSTEIN COWS IN SIMILAR CONDITIONS APART FROM THE TEST.

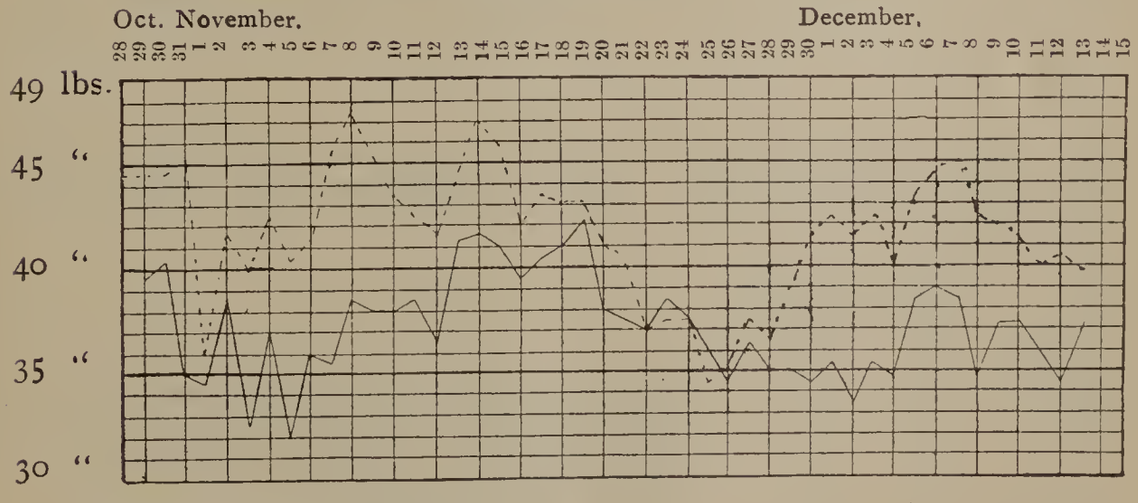
	BELVA. Calved Sept. 16th. Lbs.	MOLLY. Calved Oct 4th. Lbs.	FREDA. Calved Aug. 28th. Lbs.
Oct.	28, 40.5	39.5	44.5
"	29, 39.75	42.25	44.5
"	30, 40.5	42.25	44.5
"	31, 35[1]	37.5	45.25
Nov.	1, 34.5	40.75	36
"	2, 38.5	42.5	41.75
"	3, 31.5	34.75	40.25
"	4, 37	34.75	42.75
"	5, 32	33 5	40.5
"	6, 36	35.75	41.5
"	7, 35.75	37	45.75
"	8, 38.25	40.5	47.5
"	9, 38	40.5	46
"	10, 38	41.25	43 5
"	11, 39	41.5	42.5
"	12, 36.75	40 75	41.75
"	13, 41.25	45.5	45
"	14, 41.5	42.25	47
"	15, 41.25[1]	46.5	45 75
"	16, 39.5	43.5	42
"	17, 40.75	45	43.75
"	18, 41	45	43.25
"	19, 42.25	48	43.25
"	20, 38	42.5	42
"	21, 37.75	43	41.5
"	22, 37.25	44.5	37 served.
"	23, 38.5[1]	43.5	37.75
"	24, 37.75	40	37.5
"	25, 36.25	38	34.5
"	26, 34.25	38.5	35.25
"	27, 36.25	41	36
"	28, 35	41	36.25
"	29, 35[1]	41	39
"	30, 34.75	41.5 served	41.25
Dec.	1, 35.5	42.5	42.25
"	2, 33.75	42	41.5
"	3, 35.75	41 5	42.25
"	4, 34.75	38.75	40
"	5, 38.25	42.25	43.75
"	6, 39	42.75	44.75
"	7, 38.5	43 75	45
"	8, 34.75[1]	43.25	42 75
"	9, 37 25	43.25	42
"	10, 37.25	41.25	41.5
"	11, 35.75	41.5	40
"	12, 34 25	42.25	40.5
"	13, 37.25[1]	43	39.5

[1] Indicates the 20 hours following the different tuberculin injections.

TABLE VII. MILK RECORD OF DAISY DURING THE PERIOD OF THE TUBERCULIN TEST, AND OF ANOTHER JERSEY COW UNDER SIMILAR CONDITIONS APART FROM THE TEST.

	DAISY. Calved Sept. 12th. Lbs.	BERTHA. Calved Sept. 17th. Lbs.		DAISY. Calved Sept. 12th. Lbs.	BERTHA. Calved Sept. 17th. Lbs.
Oct.	28, 20.75	29.25	Nov.	21, 18	30
"	29, 20.75	27.75	"	22, 19.25	27
"	30, 22.25	29.75	"	23, 18.5[1]	26.5
"	31, 21.5[1]	26	"	24, 17	25.5
Nov.	1, 19	27.75	"	25, 17	26
"	2, 20.25	27.25	"	26, 18	23.5
"	3, 19	26	"	27, 17	23 served
"	4, 20.5	26.75	"	28, 19	23
"	5, 17.25	24.75	"	29, 18[1]	24.25
"	6, 19.75	24	"	30, 17	23
"	7, 17.75	26.25	Dec.	1, 17	24.5
"	8, 19.5	30.25	"	2, 19	26
"	9, 21	30.25	"	3, 16	25.5
"	10, 19.25[1]	28	"	4, 17	24
"	11, 17	27.5	"	5, 16	26.5
"	12, 18.5	28.5	"	6, 17	26
"	13, 20	29.75	"	7, 15	28.25
"	14, 19	27.75	"	8, 15[1]	27.5
"	15, 17.5[1]	29	"	9, 17	27
"	16, 19.75	32.5	"	10, 15.75	24.25
"	17, 18.25	33.5	"	11, 16.75	26.25
"	18, 19.5	30	"	12, 17	27
"	19, 17.5	30.75	"	13, 15[1] served	26.75
"	20. 20.5	25.5			

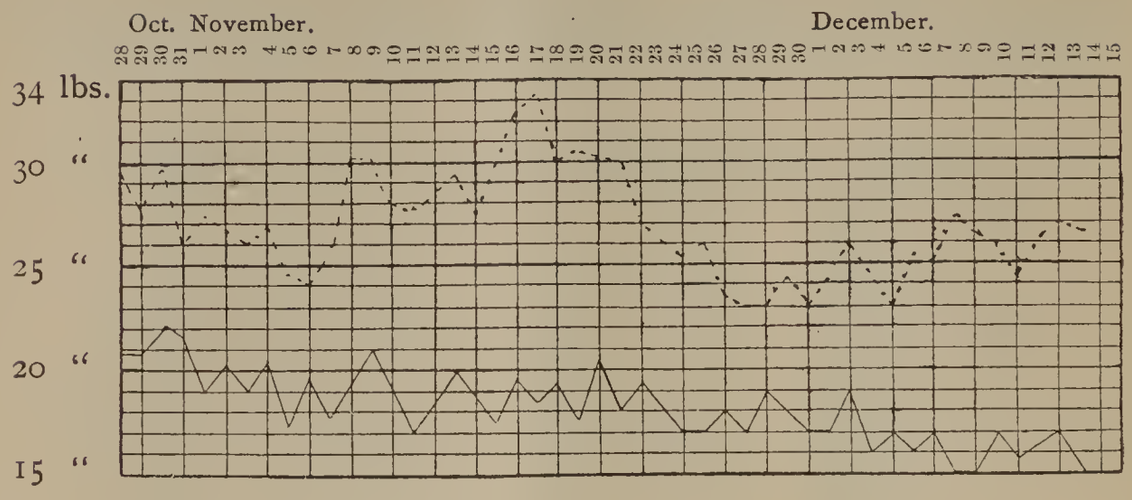
TABLE VIII.



(Holstein) Belva's milk record ——
(Holstein) Molly's milk record - - -

[1] Tuberculin in system, the day following injection.

TABLE IX.



(Jersey) Daisy's milk record ——
(Jersey) Bertha's milk record - - -

TABLE X. PERCENTAGE OF BUTTER-FATS IN MILK OF BELVA DURING EXPERIMENT; ALSO IN HOLSTEIN COWS MOLLY AND FREDA NOT INJECTED.

	BELVA. Per cent.	MOLLY. Per cent.	FREDA. Per cent.	
Oct. 20,	3.6	4 9	3.2	
" 27,	2.85	3.85	3.5	Three days before first injection of tuberculin.
Nov. 3,	3.2	4.25	3.55	Three days after tuberculin injection.
" 10,	3.2	3.8	3.35	Under tuberculin. Injected night before.
" 17,	3.3	3.75	3	Two days after tuberculin.
" 24,	2.9	3.65	3.3	One day after tuberculin.
Dec. 1,	2.8	3.95	2.95	Two days after tuberculin.
" 8,	3.4	3.4	3.1	Under tuberculin. Injected night before.

TABLE XI. PERCENTAGE OF BUTTER-FATS IN MILK OF DAISY DURING TUBERCULIN EXPERIMENT; ALSO OF JERSEY COW BERTHA NOT INJECTED.

	DAISY. Per cent.	BERTHA. Per cent.	
Oct. 13,	5.1	4.8	
" 20,	5.6	4.45	
" 27,	5.1	5.05	Three days before first injection of tuberculin.
Nov. 3,	5.3	5.05	Three days after tuberculin injection.
" 10,	5.5	5.3	Under tuberculin. Injected night before.
" 17,	5.5	5.4	Two days after tuberculin.
" 24,	5.4	4.25	One day after tuberculin.
Dec. 1,	5.05	5.1	Two days after tuberculin.
" 8,	4.9	4.85	Under tuberculin. Injected night before.

TABLE XII. PERCENTAGE VARIATION IN THE CONSTITUENTS OF THE MILK OF HEALTHY COWS UNDER A TEST-DOSE OF TUBERCULIN.

No. of Animal.	Date.	Total solids.	Sugar.	Albuminoids.	Fat.	Ash in milk.	Acidity. Lactic acid.		
113,	March 31,	11.01	4 17	3.26	2.54	0.775		Before injection.	
113,	April 1,	10.69	3.84	3.20	1.52	0.696		After	"
217,	March 31,	10.83	4 17	2.96	2.23	0.723		Before	"
217,	April 1,	10 38	4.16	2.89	2.54	0.700		After	"
217,	" 12,	11.03	4.17	1.26	2.56	0.681		Before	"
217,	" 13.	9.77	3.57	1.39	1.53	0.727		After	"
217,	May 31,	12.03	4.16	2.82	2.43	0.711		Before	"
217,	June 1,	10.25	4.16	2.29	1.27	0.666		"	"
217,	" 5,	11.26	4.16	2.70	2.03	0.688	0.176	After	"
217,	" 11,	11.97	4.16	4.17	2.03	0.590		No	"
217,	" 12,	10.82	4.16	3.83	1.52	0.692		"	"
217,	" 13,	11.30	4.16	3.97	2.02	0.751		"	"
217,	" 15,	11.62	4.16	4.25	2 03	0.767		"	"

REPORT OF THE COMMITTEE ON VITAL STATISTICS.[1]

BY E. P. NILES, D.V.M., CHAIRMAN,
BLACKSBURG, VA.

As chairman of the Committee on Collective Statistics I beg to submit the following report, much of which I have copied word for word from reports of individual members. The work of getting up this report has been left entirely with the chairman of the committee; one member having moved from the State, and the other having his time occupied in preparing for a trip to Europe.

I wish to take this opportunity to thank those of the Society who have kindly responded to the call of the committee, and to urge those who have not to strain a point in that direction in the future. The notes which have been received from various members of the Association are interesting. Many of them are especially valuable and show close observation. Some of the diseases reported are practically new to us, or at least they have not been recognized as such when seen.

One case of acute nephritis is reported in a gelding eight years old, which was stabled in a damp and poorly ventilated basement. The patient was doing fairly well when it got cast in its stall one

[1] Read before the Virginia State Veterinary Medical Association, June 18, 1895.

night and died before morning. Post-mortem revealed a calculus in the substance and pelvis of right kidney. The stone was arranged in distinct layers loosely adherent to each other.

Infectious abortion is reported as existing in five herds of cattle in 1894. The usual preventive measures and treatment were adopted with satisfactory results.

Dr. Drake reports tuberculosis as being prevalent among thoroughbred, especially Jersey, dairy cattle in his section of the country.

The question as to whether or not fistula and poll-evil are contagious is raised in the same report, the doctor having some reason to suspect such to be the case. The same party is desirous of hearing the views of some older members as to what line of treatment, both curative and preventive, is most effectual. The contagiousness of fistula and poll-evil has never been demonstrated, yet there are circumstances which certainly point in that direction in many cases.

We now come to the most important part of our report: the discussion of some diseases which are reported to exist in and around Richmond by our worthy President. Horses taken to the city of Richmond from other States, and especially from the Western States, are reported almost invariably to undergo an attack of influenza, which is considered present at all times. The infection is not confined to the sale stables, but extends to private stables where but one horse is kept. The question naturally arises, Is it not possible that the infective medium is perpetuated and in some way communicated to other horses of the city by the continued arrival of sale-stock from other States? During the past year, however, the disease has been less frequently met with, and in a milder form and less liable to fatal complications than for a number of years past. One complication, or sequel, however, has been noticed to be of greater frequency of late than of former years, intra-ocular inflammation, a description of which we quote: "The complication usually manifests itself after convalesence has commenced, but occasionally during the height of the fever. The extent and nature of this ocular trouble varies in different animals and seldom affects more than one eye. The disease, as a rule, appears as an iritis, often complicated with disease of the lens or its capsule, and later on the cornea becomes involved as well as the conjunctiva." . . . . In many cases the inflammatory exudate apparently consists of pus or blood, or both, appearing as a sedi-

mentary deposit at the bottom of the anterior chamber of the eye. Treatment was satisfactory in most cases, but not all. It will be seen by the description that this complication differs from the usual ocular complication of influenza in that the inflammation begins within the orbit, finally extending to the conjunctiva and other membranes of the eye, while the reverse is true of the usual complication. Locomotor ataxia is also reported as a complication in three cases, two of which made a good recovery; the third is classed as incurable, showing the same symptoms as those generally seen in so-called immobility. The want of muscular co-ordination in this animal is said to be as perceptible in the fore-limbs as the hind ones.

Contagious pleuro-pneumonia of the horse is reported as being confined almost entirely to horses in the sale stables recently shipped to the city from other points. Owing to the unsanitary conditions under which horses are shipped and long distances, the constitution is so weakened that the animal rapidly succumbs to the disease. The disease is usually found in the same stable with influenza, and may easily be mistaken for pulmonary complications of the latter.

Strangles is reported as being more prevalent during the last few months than for several years previously. It is not confined to horses or colts of any particular age or breed. With one exception it has not been met with in the same animal the second time. The following is quoted from the original report: "Strangles still prevails, but to a less extent than in the spring. I had no fatalities from it, but one case worthy of note was a result of it. In February I attended a yearling bay filly; the abscesses were slow in forming and contained but little pus when opened. She recovered from the general effects of the disease, but the submaxillary and subparotid lymphatic glands remained large and indurated. Blistering had no effect on the enlargements, and I resorted to other means. On April 13th, with a hypodermic syringe, I injected tincture of iodine into the enlargements on the right side, and I was about to repeat the injections on the left side when she suddenly fell and became comatose. She was very restless and fought the twitch very much. Hypodermic injections of stimulants, and other means, were tried to rouse her, but she never regained consciousness, and died about 10 P.M., three hours after she fell. Post-mortem examination held next morning a little after daylight revealed abdominal organs normal; both ventricles of heart contained a

little frothy, dark blood, but the organ itself was normal; both lungs œdematous, the right one being very much hypostatically congested, having laid and died on the right side; the bronchial tubes were glutted with a frothy mucus; the mucous membrane of trachea and larynx dark from congestion, but showing no signs of recent inflammation. The enlarged glands were carefully dissected, and the tracks of the needle of the hypodermic syringe were easily traced by the iodine discoloration. By the same means it was ascertained that the iodine was confined to the indurated glands, and that neither the needle nor the iodine interfered with any vessel or nerve. There was a small cavity in the gland filled with inspissated pus, which was evidence of the fact that this cavity would have had to be discovered and evacuated before a cure could be effected. The brain was next examined, and immediately on exposure the remarkably blanched appearance of the gray matter pointed out its anæmic condition." In view of the history of the case and the enlarged glands in the region of the carotids, and the anæmic condition of the brain, death was attributed to embolism.

Glanders is reported to exist to some extent in the city of Richmond, but probably limited to a few individual animals. Suspicious cases are occasionally met with, but the symptoms are not sufficiently pronounced to justify destruction. One case of epistaxis is reported in which ulcers were present under the wings of both nostrils. These ulcers, however, lacked the characteristic ragged edges and pit-like appearance of glanders ulcers. Treatment was prescribed and the mallein test recommended, but the owner refused the latter on account of expense. The case is reported as doing well under treatment.

The treatment of atrophy of the scapular muscles by hypodermic injections of solutions of common salt is reported as having been followed by malignant œdema. As the sterilization of the needle of the syringe was the only antiseptic precautions used, it is probable that the germ of the disease was introduced along with the needle. Since the occurrence of this complication, and that of tetanus and abscesses, the doctor has observed strict aseptic rules, such as shaving the hair and scrubbing the skin with creolin, boiling the solution of salt, and thoroughly disinfecting the entire syringe, with the result that not a single complication has followed this line of treatment since. We may add that the efficacy of the free use of antiseptics and other necessary aseptic precautions is demonstrated

in the above. The one case of malignant œdema specially referred to, however, may not have been due to the hypodermic injection, as a wound on the shoulder is reported, through which the germ may have entered. On the other hand, the absence of complications, when more strict precautionary methods are pursued in the injections, would point to infection by means of the injection.

No cases of anthrax have been reported, and so far as I am able to learn the disease is almost unknown in the State. In the middle of last summer, however, a farmer living a few miles north of here arranged to flood his pasture from a small creek, as the grass was dying for lack of rain. This was done in the hottest season of the year, and about two weeks afterward I was called to treat a yearling heifer. The animal had been sick two or three days, and, in fact, was somewhat improved when seen by me. Considering all of the circumstances of the case, I gave it as my opinion that the animal was suffering with a mild attack of anthrax, and that it would probably recover, which it did in due time. About two months ago I was called to Dublin to examine a three-year-old steer in excellent condition. I reached the place late at night, and did not see the animal until after death, as it died that night. Next morning held a post-mortem. Peritoneum inflamed and thickened; abdominal cavity filled with serum; kidneys and bladder normal; circumscribed spot in right lung about eight inches in diameter filled with dark blood. Steer was said to have had hemorrhage from the nostrils before death. As my time was limited, in order to catch the train, I did not make as complete an autopsy as I desired to, but gave it as my opinion that the animal died from anthrax. Microscopical examination confirmed my opinion. About two weeks before this animal was taken sick a small stream of water running through the pasture had overflowed, washing a great deal of débris out on the pasture. As the grass grew more rapidly here than on the high ground the cattle naturally grazed this place more than others. I attribute the disease in both instances to the overflow of the pasture.

Enzoötic hematuria, or toxic gastro-enteritis, as a result of feeding upon various kinds of shrubbery, is reported to have affected a number of colts, some of which died before being treated. All that were treated made a good recovery. The following is a copy of the symptoms and post-mortem appearances of the disease: "Animal stood dull and listless, taking

little or no notice of what was passing about him; eyes either half or wholly closed, head down, breathing slowly, abdomen tucked up in flanks, giving a gaunt appearance; visible mucous membranes of mouth and eyes icteric. When they moved it was with a staggering gait. One was caught for the purpose of examination and became very excited, and in the struggle fell, still continuing to struggle so much that I decided not to record the pulse or temperature, as under such circumstances they would not have been trustworthy. In age the colts ranged from one to three years. . . . One of the colts (a two-year old) died some time during the night. Autopsy about 1 P. M.: Decomposition had set in; subcutaneous tissue icterical; lungs collapsed; stomach gorged with a coarse, fibrous, somewhat moist, fetid mass of ingesta mixed with grass; cæcum and colon also contained ingesta of the same kind, but not in such large quantities; the dung was soft throughout; inflammation extended through entire digestive tract from stomach to anus; spleen visibly enlarged, but contents not noticeably deranged; liver soft and friable, and of a color impossible to describe, but reminding one of an odd lead-color; kidneys enlarged and inflamed, with collection in pelvis of very thick matter resembling pus; bladder inflamed, and containing a large quantity of bloody urine, at least urine so appeared to the naked eye." It is thought that the above disease is often diagnosed as anthrax when no microscopical examination is made.

Gangrenous dermatitis is reported as affecting a number of horse and mule colts on one farm. Large portions of the skin became gangrenous, and the parts discharged pus profusely. It is supposed that the presence of lice caused the colts to rub until the skin became abraded, allowing the entrance of vegetable parasites, probably moulds, which would seem to be the direct cause of the gangrene. We would suggest that this gangrene may have been caused by the presence of pus-forming bacteria, which, in view of the profuse purulent discharge, must have been present in great numbers. Senn, in his *Principles of Surgery*, describes a form of gangrene caused by the streptococci. He also says: "All bacteria which can produce an inflammation sufficiently severe to completely arrest circulation can become an indirect cause of necrosis." It would, however, require a careful microscopical examination to ascertain whether the gangrene in question was due to a mould or bacteria. Your committee is inclined toward the latter.

Southern cattle fever was prevalent in various parts of the State during the last summer and fall.

Tuberculosis is reported as being prevalent among the dairy herds in the State. Out of one herd of 130 cattle reported in Bulletin No. 7 of the Bureau of Animal Industry, 90 reacted to the tuberculin test. But few of the cattle were destroyed, but those that were showed tuberculous lesions, proving the accuracy of the tuberculin test. This herd is said to have every advantage of good care, fine buildings, and good surroundings.

Canine distemper is reported to have prevailed to a great extent during the past year, with great fatality. The type was principally the nervous form, which gives rise to so many "mad-dog" scares. The malady still exists, and cases are frequently met with. A fine pointer owned by the foreman on the college farm was thought to be "mad" a few days ago, and was at once destroyed before I had opportunity to see him. As described to me, however, the disease was certainly the nervous form of canine distemper; the only case I have heard of in this section.

Dr. Williamson, of North Carolina, reports a form of diarrhœa in colts (gastro-enteritis), which causes severe losses in very warm, wet weather. The disease also extends to young calves. It is, however, successfully treated with decoctions of oak-bark, preferably the bark of red oak. One ounce of the decoction is given three times daily, or oftener if necessary.

During the month of February a disease made its appearance which at first was thought to be only a variation of influenza, and other cases of it were treated for strangles, as the latter disease was prevalent at the time. The owners of several infected animals told me that they had had colt distemper when they were younger, and then the number of cases not having abscesses led me to watch the primary symptoms with closer attention; these points, in connection with the fact that the usual symptoms of influenza, such as debility, ophthalmia, anorexia, extremely high temperature, lung and pleural complications, etc., were wanting, led me to the conclusion that I had to deal with an independent disease which was not a complication of either strangles or influenza. At first I did not consider the disease infectious, as but one or probably two horses would be affected in a large stable. The weather, which was very changeable, often wet and cold, was thought to be sufficient cause, but after a time instances frequently occurred that caused me to change my mind, and I now think the affec-

tion an infectious one, though mild. About the first symptom noticed is difficulty in swallowing; the animal, although having a desire for food and water, abstains from both on account of the pain caused by the attempts to swallow. Water is returned through the nostrils; also food, which is especially noticeable, when the animals have been eating grass, by the green color of the discharge. In nearly every case one or both thyroid glands are enlarged. The sublingual, submaxillary, and subparotid lymphatics become enlarged and painful; occasionally the parotid glands are involved. The temperature may rise to 105° F., but it is usually much less. If debility occurs it is due to inability to swallow food, and not the effect of fever or the constitution. Flesh is not noticeably lost except in the cases where the difficulty in swallowing lasts for some days. The appetite is not lost, nor is the desire for water. Pressure over the region of the pharynx causes much pain and is violently resisted. After two, three, or four days a discharge of pus from the nostrils appears, which is soon followed by improvement in the act of swallowing. In a few days the enlarged glands begin to assume their normal condition. The majority of the cases recover in about ten days, showing little if any bad effects of the attack. Occasionally an abscess will form in the intermaxillary region, but never in connection with the thyroids. Occasionally a case is met with where the breathing is difficult and noisy for a day or two, which is most probably due to a larger abscess than usual in the pharynx interfering with the larynx, but as soon as a profuse discharge of thick yellowish pus appears from the nostrils, showing that the abscess has burst, the breathing becomes easier. The cough is made much worse by attempts to swallow food. After the discharge appears, large lumps and flakes are coughed up or dislodged by the cough and discharged from the nostrils There were no fatalities and no sequalæ. All cases made satisfactory recoveries, most of them in a comparatively short time, but a few remained on the list for a much longer time than the average. Sporadic pharyngitis is by no means an uncommon affection, but we meet with it in isolated instances, and we know that the first stage of regular strangles is a pharyngitis, but this is my first experience with pharyngitis as an enzoötic, or as it may be called an epizoötic, as the cases were not confined to Richmond; I had quite a number of cases in Manchester and in the suburbs of both cities. I did not see a case in a mule.

The most cases were met with in April and May, and I still see a case occasionally.

Two other interesting cases have been reported to your committee, but, as they are surgical cases, it was thought best to bring them up for discussion under the head of special cases.

Attention is called to the fact that no law exists in the United States looking to the prevention and control of such diseases as influenza and strangles. It is, nevertheless, a fact that these diseases cause the loss of many animals, and are spread by the loose manner in which horses are allowed to be shipped. There is a law purporting to control glanders in this State, but it is worse than none, having been framed and passed by parties who evidently did not know that such a being as a veterinary surgeon existed.

In conclusion, your committee respectfully urges each member of the Association ever to be on the lookout for interesting notes on the various diseases, whether common or not, which may come under their observation. To that portion of the medical profession who have joined us, we beg to suggest that they turn a portion of their attention to the collection of such notes as would be of interest from a comparative standpoint.

PRESIDENT'S ADDRESS.[1]

BY DR. W. H. HARBAUGH,
RICHMOND, VA.

In Virginia the veterinary profession is but in its infancy; the formation of this Association, we may say, marks the date of our profession in this State assuming anything like an independent or a distinct character, and, thanks to the members of our Association, the profession is now a healthy and rapidly developing infant. Ten years ago when I commenced to practise in Richmond there was no other graduate in that city; there were but two other graduates in the State. The first three veterinarians coming to Virginia remained but six months to two years. The fourth located at Norfolk, where he still practises. The fifth remained six months; others followed to remain a variable length of time.

[1] Read before the Virginia State Veterinary Medical Association, June 18, 1895.

In 1891 Dr. Niles came to Blacksburg, and soon after his arrival he wrote me in regard to forming a State Association, but after counting heads we could not discover a sufficient number of graduates in the entire State to officer a society properly, and there the matter rested, so far as we were concerned, for several years.

About the middle of January, 1894, a bill was introduced in the Legislature which had for its object the regulation of the practice of veterinary medicine and surgery. Parts of it I considered very objectionable, and I felt sure that it did not represent the desires of the majority of the graduates. I appeared before the legislative committee that had the bill to consider, and so vigorously opposed it that my objections were sustained by the committee and the bill was never reported. The chairman of the committee suggested that the veterinarians should agree upon a bill, and he would set a date satisfactory to all to have it considered. I immediately wrote all graduates I was aware of in the State; those I heard from reported others, and I was much surprised to learn that within a year the number had more than doubled. Dr. Niles again suggested the formation of an association, and urged that such a step was necessary either to secure the desired legislation or to block objectionable measures. Drs. Faville and Gilchrist proposed a conference at Richmond on the subject of legislation and notified me of the day they proposed to be there. I immediately telegraphed Dr. Niles, who responded in person.

On February 6, 1894, we agreed upon the minor details of a bill which the great majority of the graduates in the State had practically indorsed by letters. This bill was the one which simply asked for a legal definition and protection of our title.

After the legislative questions were settled, Dr. Faville proposed the organization of the Association, which was agreed to, and six of us signed the agreement. A temporary chairman and secretary were elected. A committee was appointed to formulate a charter and have the Association incorporated by act of Legislature. The chairman was authorized to call a meeting at such time as in his discretion was thought best after all preliminaries had been arranged.

The Committee on Charter concluded to adopt so much of the charter of the Medical Society of Virginia as was pertinent. The modified charter was presented to the Legislature and made a law, and this act incorporating our Association was the first

law ever passed in this State which recognized the veterinary profession. When the bill to incorporate was presented we had eight members, and when the permanent organization took place we had twelve members.

On March 22, 1894, the first regular meeting was held at Richmond. It was a busy day for those who attended the meeting, and a red-letter day for the profession in this State. The whole time was occupied with regular business. No essays were read and no cases reported.

The bill we presented to protect and define our titles never became a law. Our next meeting was held at Norfolk, August 15, 1894. It was a successsful meeting in every respect, and the bountiful hospitality of the Norfolk members will ever be pleasantly remembered by all who were in attendance.

Dr. Faville read a paper on "Malaide du Coit," and demonstrated his description with pathological specimens taken from affected animals. This subject was a rare treat to veterinarians, and I think it scarcely possible for any one present at that meeting to fail to recognize the disease if met with in practice. Practical papers and demonstrations of this kind will do more to create interest and assure a full attendance than any other attractions we can offer. In the appointment of essayists for future meetings I hope this suggestion will be followed: At least one essayist should be selected who will read a paper on a surgical subject and demonstrate practically his method of operating. Other members may also be induced to operate, provided subjects are secured for them. This feature, if introduced, will have considerable bearing in the selection of places for holding meetings.

Dr. Niles read an exhaustive paper on "Tuberculosis," which showed much labor in its preparation, and was remarkable for its practical work. The paper was published and indorsed by medical and agricultural journals, and extracts were re-published by the daily press. It did much toward bringing the subject before the public in a manner creditable to both Dr. Niles and the profession. At this meeting one member was dropped and two new members were elected.

The next meeting was held at Charlottesville, January 3, 1895, and proved to be our most successful meeting in more respects than one. Papers on different subjects were read and discussed and interesting cases were reported. The Charlottesville members provided a regular Christmas-time entertainment for the

visitors, and the whole time of our sojourn was profitably and enjoyably occupied. Six new members were elected at the Charlottesville meeting.

We are now at Blacksburg for the purpose of holding our first annual meeting, and the history of it must be made before it can be written. I can only say that I hope this meeting, as well as all future meetings, will be attended with the same good share of success as fell to our lot during the past year.

The affairs of the Association are in good condition. We have become a fixture, and it should be the aim of every member so to conduct his professional work that in time the public will recognize the fact that only legitimate veterinarians can be members.

So far as I know there are not more than five eligible men in the State who are not members or applicants for membership. This emphasizes the fact that we are not only the representative organization of our profession, but that we almost wholly constitute the profession in Virginia.

The more competent men who locate in the State, the sooner will the profession arrive at its proper standing beside other learned professions. Do not be afraid that new-comers will deprive us of our living, they only help to educate people up to the standard of employing legitimate men; they certainly help to create a demand. It is not many years since I was the only graduate in Richmond, now there are five, and I can honestly assure you that I now do more than five times as much business as I did when I had the field to myself, and I presume the other practitioners there are as well satisfied as I am.

There are some good places in the State without graduates, and I feel certain that proper men could build up good practices in them. But new-comers should be informed that it requires patience and perseverance to build up a paying and permanent practice, and that in a new place where people have been in the habit of employing different neighbors when their animals were ill they do not in all cases immediately desert those neighbors upon the arrival of a new man, even if he is a graduate in veterinary medicine. It takes time to prove to the people that the diploma carries with it more knowledge than is acquired by years of dosing animals.

As the profession grows in importance, young men of our State are looking toward it with a view of entering its ranks, and our advice is often sought in this regard. Our advice in

such cases should be guarded; we should consider well the fitness of the individual who applies for advice. We are also asked for an opinion as to the best college, and here, again, our opinion should be guarded, and also qualified. There are colleges and colleges, but to pick out the best for all applicants is a difficult task. But some applicants do not want the best, they want to know the one easiest to get through, and I am sorry to say that we all must admit that there is at least a sufficient number of this kind to give the applicant an opportunity to select.

For some time past there has been much agitation in respect to the relative merits of the two-terms and three-terms veterinary schools. There can be no doubt that a properly equipped three-terms school can impart more knowledge and impart it better than a two-terms school similarly equipped, but we must not overlook the fact that some of the best veterinarians of our time were graduated from two-terms schools; however, their great advance over their contemporaries is to be credited in a large extent to their individual efforts rather than to their alma mater. We are all acquainted with men who might attend colleges five, ten, or even twenty years and still be unfit to practise; while we know others who were really competent men at the end of two years. This refers mainly to theoretical knowledge; but how about practical knowledge? In my opinion the question does not hinge so much on the number of years a man attends college as it does on the intelligence and the adaptability of the individual to acquire and utilize the special instruction imparted to him. The comprehension of men differs vastly. Some men can acquire more knowledge of a special character in a year than others can in a lifetime, and it would serve no good purpose to compel the quick, intelligent student to remain in college till the slow, dull student was sufficiently educated. At best, the course at colleges can only be considered necessarily preparatory; the real test is when one is brought face to face with the stern realities of practice, and many bright students make absolute failures as practitioners.

It is a notorious fact that the amount of practical instruction imparted at colleges is shamefully inadequate. Students are graduated who have never witnessed even one of the minor operations, and who have not had the benefit of any clinical demonstrations whatever.

The average professor enters the lecture hall, talks for an hour or less on a subject, quotes the conflicting opinions of different

authors, and then departs, leaving the mind of the student in such a confused state that he is compelled to resort to his text-book to ascertain what the professor was talking about. Quite a number of these professors are totally unfit to teach on account of either not having a good understanding of the subject or from a lack of a certain tact which is necessary to impart knowledge to others, and some are medical doctors who have no practical knowledge of the animals we treat, but still they mount a platform and pretend to teach what they do not know themselves. The result of such methods of instruction cannot fail to discourage many students who, under more favorable methods, would become competent men.

Much has been said about insufficient examinations to ascertain the fitness of graduates, but if the examinations of students should be rigid, which we all must admit, how much more is it necessary that institutions should require a still more rigid examination before a man is given a professorship?

It is often urged that the advance in veterinary science has made three terms necessary, but while the advance in all scientific branches, which, as a whole, constitute veterinary science, has been great, it must be remarked that the facilities for acquiring and imparting knowledge have advanced in equal, if not greater, proportions, so that one can now gain much more exact knowledge in a given time than he formerly could. Many important questions that in former times were in doubt and darkness have been cleared up and are now thoroughly understood.

Simply because a school advertises three terms is not in itself sufficient to warrant us in indorsing it; we should know that the teachers are competent men, not failures in practice, as we know many of them to be; we should also know that the schools we indorse honestly devote a great part of each session to practical instruction. A man who professes to be a teacher should be competent to demonstrate practically to his class what he teaches.

One can scarcely peruse a college catalogue that does not contain a laudatory notice of the facilities for imparting practical knowledge, but consult the students from the various institutions and you will ascertain that but few of the schools live up to their advertisements.

All associations have, I believe, a code of ethics to govern the professional conduct of the members, and it strikes me as very inconsistent that we require our members not to do things

we silently overlook in the advertising and other business methods of some colleges. We would condemn a practitioner who would solicit work from the client of a fellow-practitioner, and rightly so, but it is not uncommon for certain colleges to send their catalogues to students who are attending other colleges, and I even know of an instance where the "professor" of one college wrote a personal letter to the student of another college to secure his attendance. I know of another instance where the principal makes a practice of sending newspaper puffs of his institution to students and graduates and requests them to have them published in the papers. We are not allowed to place proprietary articles on the market, but the professors will give certificates and testimonials for proprietary and patented articles which are published in our professional journals. It is no wonder that veterinarians will occasionally go into business enterprises when they are set such examples by their tutors and preceptors.

It is easy to censure others for what we do not do, but before criticising others we should be careful that we are not guilty of acts of another kind just as liable to adverse criticism.

A college faculty without a respectable veterinary practice, and without means of imparting practical knowledge to its students, necessarily turns out graduates who are not competent to begin practice.

There are many graduates who utterly fail in practice simply because they have no practical knowledge to start with. There are many whose gross ignorance and glaring mistakes cause such an amount of opprobrium that it is difficult for competent men to overcome the effect of it. We are all liable to mistakes, I am sorry to say, but mistakes are made by many for which there can be but one excuse, and that is the inadequacy of the manner or method of the institutions that turn them out. Examples of this class of men are numerous, but I will give only a few instances: A graduate of a three-terms school endeavored for more than an hour to throw a colt to perform the ordinary operation of castration, and then allowed a non-graduate to castrate the colt for him. This graduate was examining for a live-stock insurance company, and in the course of his examination met with three or four horses with cataracts, when he communicated to me that he had discovered a new contagious disease of horses' eyes. He was treating a horse for what he diagnosed as "sweeney," and had the shoulder raw from re-

peated blisters, when another veterinarian was called in and pointed out a large ringbone as the cause of the lameness. Another graduate treated a valuable St. Bernard bitch for a year for what he diagnosed as "the womb out;" he gave the owner medicine which, he said, "would shrivel up the womb so that it would go back itself." The owner finally became discouraged and went to another veterinarian, who readily diagnosed the trouble as eversion of the vagina and removed the protrusion with a knife, and the bitch is now with pups. This same graduate was called to see a mare with relaxation of the sphincter ani; when she trotted the ingress and egress of air was accompanied by a noise. In explaining to the graduate the owner mentioned this noise as the annoying symptom. The graduate pulled off his coat, rolled up his sleeves, inserted his hand into the vagina, and, after more or less manœuvres, he informed the owner that the "mare's womb was down and a little twisted." He told the owner to inject "a teaspoonful of carbolic acid in a quart of water, and she would soon be all right." It was in vain the owner told him that she made the noise with the "upper hole."

Most of you are personally acquainted with the veterinary editor of an agricultural journal who, in an article intended to instruct farmers how to remove the placenta from a mare, got his anatomical knowledge ridiculously mixed and told them to unbutton the placenta from the cotyledons in the same manner they unbuttoned their coats. This same graduate recently reported a horse as having glanders, caused the horse to be locked up and the owner put to much trouble, simply because the horse had an offensive discharge from the nostril; another veterinarian was called in who demonstrated by trephining that the trouble was caused by a diseased tooth, with collection of pus in the sinus, and, as a consequence, the horse instead of being destroyed is now doing his daily work.

Such instances as the foregoing are not uncommon, and I do not mention them in ridicule, but in order to illustrate the point that such mistakes are due to a want of practical knowledge, and to emphasize the fact that if those graduates had received proper demonstrations at their schools such mistakes should not have occurred.

Of more importance than an increase in the number of terms is an increase in the amount of practical work at our schools. I am of opinion that it should be compulsory for students to

serve, at least, as much time under qualified practitioners (in fact, an apprenticeship) as they are required to serve at college, and at their final examination they should be compelled to demonstrate in practical work that they are competent to practice.

All colleges should enforce a rigid examination to ascertain if an intending student has sufficient intelligence and sufficient education to comprehend lectures and instructions. It is not a rare thing to meet graduates whose attempts to write prescriptions are as disgusting as their ill-timed boasting of their diplomas and their science.

Another class of men we occasionally meet are those who have no idea of animal nature; they cannot even approach a horse without fear, and we see them stand at a safe distance from the animal when they should be at his side. They are too timid to pick up a horse's foot, and yet I have seen such men attempt to instruct a blacksmith how to shoe a horse.

Next to the inadequacy of colleges and lack of practical instruction is the lack of the adaptability of the individual. A veterinary graduate may know Latin, German, and French, the literature of the world may be open to him, he may be expert with the microscope and may be able to talk learnedly of pathology, histology, and bacteriology, he may be a first-rate office or library companion and a real clever fellow, but if he has no knack in handling stock and is afraid to go near a horse, the symptoms of an ordinary colic will temporarily scare out of his head all the scientific and linguistical lore he has accumulated. Such men made a mistake when they entered our profession, and their failure to succeed in practice cannot be charged to colleges.

In order to improve the standard of graduates we must have better equipped colleges, better qualified teachers, and I may truthfully say better qualified students, then we may expect better qualified graduates as a natural result. But an increase in the number of terms will not alone secure this result; an apprenticeship system will, however, greatly tend to it, as by this means the student will be enabled to learn the nature of the knowledge he has to acquire, as well as his fitness, ability, and his probabilities of success.

I hope our Association will not be too hasty in taking action on the question of three terms. For the present let us at least be conservative and just. I think you will find that the number of incompetent men graduated from three-terms schools are

in proportion to those graduated from two-terms schools, of course taking into consideration the proportionate number each school graduates. The majority of the members of our Association were graduated from two-terms schools, and the eligible men in this State are so few that it will be much better for us to endeavor to create a standard among ourselves than to draw the line on the number of terms a man may have attended college. Our ranks are not overcrowded in this State, and let us hope the new-comers will be eligible to membership in this Association whether from two-terms or from three-terms schools.

To some of you it is known that there is a desire to start a veterinary college at Richmond, and you also know that I have been asked to head the effort, but I have never hesitated to discourage the idea on the ground that the proper material is lacking to make what I consider a veterinary institution should be.

In order to keep abreast with advanced ideas it is necessary for us to read our professional journals, and I believe we are all more or less liberal subscribers to those publications, and in this regard I desire to call your attention to the *Virginia Medical Monthly*, a journal worthy of our support. I will add that its editor requests for publication all papers that are of interest to the veterinary and medical professions combined. I will also say that if sufficient interest is taken in the matter by veterinarians the editor will include a veterinary department in his journal.

Membership in our Association is open to members of the medical profession, and I am glad to say that influential men of that profession are joining with us. Disease is disease, whether in man or beast, and the commingling of the representatives of the two professions at our meetings can only result in mutual benefit.

As the Committee on Legislation will make a report at this meeting, the subject will be generally discussed. For one, I am not in favor of being hasty in having laws passed. We should go slow, and whatever we ask for let it be reasonable, and let it be a foundation on which to build in the future. I think you will find that the majority favors asking for a law that will simply protect and define our titles.

I am unalterably opposed to any measure that will make legal practitioners of non-graduates with the right to assume our titles, no matter how long they have been in practice. While it is true there are some non-graduates who are worthy men and honestly do the best they can, there are also in this State hundreds of

frauds and imposters, both white and black, who cannot even read or write, many of whom have been practising ten or twenty years, or longer, who would become recognized practitioners under any law that made it possible for a man to become a registered veterinarian simply because he could prove that he had been dosing horses for a specified number of years. The legal recognition of such men would be preposterous; it would carry us back too many years. It is all well enough for the advocates of such measures to assert that it is the only means of getting rid of such men eventually, but you must bear in mind that we would not see the last of them in our days.

It would be much better in every way to have no law at all; much better to allow them to continue to practice as they are doing, without license and without standing or recognition. Simply have a law to prevent them from using our titles, and we will get rid of them sooner than by legalizing them in the manner done by some other States.

At present we cannot expect a law to confine the practice to legitimate veterinarians. Graduates in this State are too few to ask for such a measure with any chance of success. There are in Virginia one hundred counties, and according to our information only about ten counties have graduates. It would be waste of time to either formulate a bill or ask for one which will prevent the people of the other ninety counties from employing what they consider their best help when their animals are ill.

Personally, I am of the opinion that the only way to regulate the practice is by a State Board of Examiners, similar to those which regulate the practice of the medical, dental, and pharmaceutical professions in this State. It should be compulsory for every man to pass a satisfactory examination before the board before he could begin practice, whether a graduate or non-graduate. This, I think, is the best way to assure competent men, but the time has not yet arrived for us to ask for such a law. We must wait till we are stronger in numbers and influence and until the public generally becomes better acquainted with our profession.

From the report of the chairman of the Committee on Statistics you will learn the extent of the infectious and epizoötic diseases in the sections of the State where our members reside. This report alone is sufficient to convince anyone of the necessity of a State veterinarian. It also plainly indicates the necessity of better legislation on the contagious diseases of animals.

I have conversed with a number of persons since Dr. Niles's bill was submitted to me, and it is the general opinion that this State should have such a set of laws, but that it will be useless to ask for any legislation that will require an appropriation of money at the next session, on account of the condition of the treasury. However, I hope that the work on this bill will be continued and that it will be perfected in every possible way, so that when the occasion is ripe it will be in form for presentation, but I consider it useless to make the effort at the coming session.

It is probable that the next session will pass the bill to reorganize the State Board of Health, and if it does the prospects are good for at least one of the members being a legitimate veterinarian.

I think it advisable that we should at this meeting devise means of issuing in book or pamphlet form the proceedings of the Association. If there is not sufficient money in the treasury to cover the expense an extra assessment will not embarrass us. The records and papers even up to date are valuable and should be in a printed form for ready reference as well as for preservation. The Board of Censors, or sub-committee from it, should be empowered to attend to this subject and select such matter as in their judgment should be embodied in the publication. I sincerely hope that favorable action will be taken on this suggestion and that we will have our transactions in book form some time during this year.

The past year has been a fruitful one in regard to adding to the list of valuable veterinary literature. Translations and original works of merit have been placed within our reach which are of incalculable aid to the hard-working and earnest practitioner. Our thanks are especially due to Dr. W. L. Zuill for his translation of Freidberger and Fröhner's unequalled work on the *Pathology and Therapeutics of Domestic Animals*. Without any disparagement to time-honored authors like Williams, Fleming, and others, who will always be gratefully remembered, I do not think it extravagant to say that this translation of Freidberger and Fröhner's work gives to the English-reading veterinarian an opportunity to acquire a scientific and rational knowledge of his profession such as has never before been possible. It is really a wholesome revelation to the average modern veterinary college professor, and it is to be hoped that he will be benefited by it to the extent of at least absorbing some of its exact

scientific teachings, so that he will be better fitted to impart instruction to his students.

Before concluding I wish to say that this address is meant for the welfare of our profession in this State, and that none of my remarks were prompted by malice, and I believe that many of the views I have expressed will be indorsed by the majority of the hard-working and earnest practitioners who are at present making the standard of the veterinarian on this continent.

In any community the profession is what we ourselves make it, and it is within our power to make much or little of it. The graduate should always bear in mind that he is the legitimate holder of the ancient and honorable title of veterinarian, once held and well used by no less a genius than Virgil himself. We must not consider ourselves the successors of the farriers; they were a class that held sway as a result, I may say, of vicious ignorance, and in their palmy days they did not even know enough to resurrect our title.

To those who aspire multiple titles or degrees, and to those who have the strange desire to affix half or more than half of the letters of the alphabet to their names, I simply recommend the study of the history of our profession as well as its principles and practice, with the hope that they will honor the title of veterinarian. The non-graduate is no discredit to the graduate, but the man with a diploma, if he is incompetent or does not consider our profession an honorable one, is a source of more harm to the profession than all other causes combined.

In conclusion, gentlemen, I thank you again for making me the first President of the Virginia State Veterinary Medical Association. I hope all who succed me in the office will appreciate the honor as I have done.

A SUGGESTION OR AID TO THE ERADICATION OF TUBERCULOSIS BY A PRACTICAL AND PROFITABLE METHOD.

(Continued.)

BY A. S. HEATH, M.D., V.S.

As a physiological fact and a pathological result, I assert that whatever in any degree weakens or impairs the system of man or animals renders them liable to the invasion of disease.

While the hereditary transmission of tuberculosis was maintained by the ablest pathologists of the past, the great strides of modern investigators have demonstrated that tuberculosis is a result of the invasion of a pathogenic organism, the bacillus tuberculosis, which they have shown to be infectious. While I cheerfully admit the truth of these demonstrations, and honor the genius, indomitable perseverance, and scientific skill of the able men who have demonstrated these facts, the results do not in any degree impair the truthfulness of my proposition, that whatever debilitates the constitution of man or animals renders them liable to take on disease. So far as I know, neither does Professor Koch nor his worthy co-laborers deny that a peculiar constitution renders the system susceptible to tuberculous invasion. A weak fort is easily taken. All persons exposed to infection of tuberculosis, smallpox, or scarlet fever do not take the infection, because all are not alike susceptible. Is it not from the fact that the strongest fort holds out the longest? Neither do all who eat the flesh and drink the milk of tubercular cows become tuberculous. That the system is fortified by health seems probable from the fact that physicians who are exposed to infection are less susceptible than others. That there does exist a diathesis which predisposes to tuberculosis I, for one, do not doubt. If this is so in man, why may it not also exist in animals which have also suffered from many evils of domestication? That this diathesis, this peculiar constitutional state of degeneration, is liable to hereditary transmission seems to me reasonable, since it is sustained by the views of the most renowned physicians and veterinarians, as well as by the large and long experiences of the most distinguished breeders of our domesticated animals. As in the human subject, so in in-and-inbred animals, pampered and paupered of constitution by the arts of refinement—fining the bone, thinning the skin, breeding for color or fancy, unnaturally stimulating the glandular system, overfeeding for long and injurious tests for quantity of dairy product, breeding together animals thus debilitated year in and year out—has brought upon some of our herds a susceptibility to tuberculosis that imminently threatens the public health.

Such a condition in our dairy herds is as expressive to the physician of comparative medicine as the following characteristic diathesis must be to the human practitioner: A clear complexion, a fine skin, beautiful and finely-cut features, roseate tint of lip, pearly white teeth, large and lustrous eyes, widely dilated

pupils, and the white of the eye as brilliant as the pearly teeth. Let us go a little further, though, perhaps, not necessary. Long and curved eyelashes of silky texture, deep blue veins showing through the translucent skin, the light fine bones as shown in the small hands and feet, the tall, thin, and graceful body and the fine nervous organization and the brilliant intellectual faculties, all proclaiming a painful lack of stamina, strength, and longevity. Similar characteristics relatively in our domesticated animals must certainly typify a lack of constitution, vigor, and prepotency not sought for by the judicious breeder.

That the preservation of his health and the attainment of longevity are the most ardent desires of every man of sane mind is undoubted. It is also true that the wise breeder of domesticated animals breeds for perpetuity of excellence and for profit. These can only be secured by breeding from sound, healthy animals and for the best products.

Breeding animals must be healthy—free from defects of form and constitution, from tendency to weakness or disease, from ill temper or bad habits; must have sound digestive organs, capable of prompt digestion, and quick and perfect assimilation of food. The breeder must intimately know the capabilities and characteristics of his breeding animals, so as to be able to adapt them to rear young which shall answer his preconceived wants. Though food, climate, soil, altitude, exposure, shelter, care, kindness, and many other operating circumstances may all produce great changes, yet, all operating at the same time and for a long period on the animal and its progeny, cannot change the species, though it may secure many desirable excellences.

By selection, we can in time breed small-boned animals into large-boned ones, long-legged ones into short-legged ones; we can breed the horned into hornless ones. In a word, by selection the breeder can make the black white, the white black, the barren fruitful, the deformed straight, the imperfect perfect; he can breed to a feather; he can produce a tendency to meat, to milk, to butter, to cheese, to capacity to labor, for speed, for endurance, or to serve almost any reasonable desire, demand, or fancy. By breeding from carefully-selected parents he can rapidly increase his flocks and herds by choosing those of great fecundity from which to breed—ewes from families that give twins, from cows that uniformly breed, from sows that farrow

large numbers of pigs—and it is just as essential that the males, also, should be selected from like prolific families of sires and dams. It is in this potential selection that the hope of breeding out the tendency to tuberculosis becomes a factor of vast possibilities.

The Norman breed of cattle, free from tuberculosis and its tendency, with a constitution of iron, and with the largest capabilities for beef and for the most valuable dairy products, with perfect health, prepotency, size, and constitution, must prove a valuable factor in the eradication of tuberculosis from our dairy herds.

If we could breed strong, healthy men as we can breed animals with like characteristics, the fearful scourge of tuberculosis would be banished from our race.

For the commercial value of my proposition I must defer for another communication.

NECROLOGY.

Dr. John Hazzard Records, of Little Rock, Ark., was found dead in his office in July last, having been but slightly ill the evening before. He was twenty-eight years of age, a graduate of the Veterinary Department of the University of Pennsylvania, Class of 1891, originally from Lewes, Del. He practised in Nashville, Tenn., Dallas, Texas, and recently at Little Rock.

Dr. Joseph F. Autenreith, of Jersey City, N. J., a graduate of the American Veterinary College, Class of 1882, died in July, after a lingering illness. He was a steadfast, earnest student at college, and these qualities he carried into his daily life as a practitioner. Officially he was connected with the Board of Health and Society for the Prevention of Cruelty to Animals of Jersey City, and a member in good standing of the U.S V M.A.

On September 9, 1895, at Cincinnati, O., from an overdose of morphia, Dr. Lawrence A. Anderson passed away at the age of forty-six years. A graduate of the Ontario Veterinary College, Class of 1893. He had established a stock-farm and veterinary hospital at Woodlawn, O., and later on a hospital in Cincinnati. He took a great interest in race-horses and dogs, and was the owner of the famous trotting-dog, "Jeff." Threatened blindness was the cause of his resorting to relief through morphia.

REPORTS OF CASES.

I. HÆMATOSALPINX AND HÆMATOMETRA IN A ST. BERNARD DOG. II. PYOSALPINX IN A DOG; AUTOPSIES.

BY DR. SPENCER.

I. The dog, aged thirteen years, had had three litters of pups, the last about eight years before death. At the autopsy there was no peritonitis found, and no other disease than that shown in the uterus. The uterus and cornua were distended so as to be three to four centimetres in diameter. The cornua were greatly elongated, measuring 81 centimetres from one extremity to the other. The contained fluid weighed 12 ounces. Both cornua communicated freely with the body of the uterus, but no fluid escaped by the cervical canal into the ganglion. When pressure was made on the distended uterus the fimbriated extremities were closed by inflammation. The upper part of the cervix was blocked by a soft, sessile polypus, 5 millimetres in diameter, apparently growing from the mucous membrane. The fluid was viscid, about the consistency of molasses, and was dark red. Microscopic examination showed that in the wall of the cornua the mucous and submucous layers were replaced by inflammatory cells, and that the fluid consisted of débris and fat cells.

II. In this case also there was no peritonitis or other disease than that of the uterus and vagina. Both uterine cornua were distended with pus, so as to be about 3 centimetres in diameter and the wall was 2 to 3 millimetres in thickness. When pressure was made on the distended cornua no pus escaped into the uterus. The fimbriated ends were closed by inflammation and the pus had not a foul smell. The vagina contained pus and its mucous membrane was slightly inflamed. Microscopic examination showed that the inflammation of the cornua affected both mucous and submucous layers. The process probably extended from the vagina and then communication with the uterine cavity was shut off.

UNUSUAL COMPLICATION ATTENDING SEPTICÆMIA FOLLOWING PARTURITION; AUTOPSY.

BY M. O'M. KNOTT, V.S.,
HOUSE SURGEON, HOSPITAL OF NEW YORK COLLEGE OF VETERINARY SURGEONS.

A GREAT Dane bitch, apparently in good health, whelped on May 7, dropping a litter of twelve pups. Three or four days later the owner noticed that she had become suddenly ill and was giving very little milk; diarrhœa and loss of flesh were also notable symptoms. General prostration followed, the pups began to die, and finally only three were left. Fourteen days after delivery the owner thought she had more pups, because her abdomen had become large again; the swelling gradually increased, and the animal became more emaciated and weaker. On May 30 she was sent to the hospital. Examination on entrance showed a well-developed emaciated dog, weighing about seventy pounds; temperature normal; pulse 60, hard and full; the extremities of the limbs slightly swollen; the visible mucous membranes dull yellow; the abdomen greatly swollen and fluctuation evident; marked dyspnœa and diarrhœa, with offensive odor. On the 31st I tapped her in the posterior part of the abdomen, a little to the left of the median line, and drew off about three quarts of almost clear fluid, with a slight yellowish tinge. The patient was much relieved, and the next day her appetite was better and she appeared brighter. The improvement did not last many days, however; she gradually became weaker and more emaciated, vomiting dark matter of an offensive odor, and died on June 11.

The treatment consisted of a diet of boiled milk, eggs, and whiskey; large doses of potassium iodide, iron and quinine citrate, and small doses of strophanthus by mouth, with enemata of oil, opium, and carbolic acid.

Autopsy. On making an incision into the abdomen considerable fluid like that obtained by tapping was found. The peritoneum, both visceral and parietal, was injected and had lost its gloss. The intestines throughout were inflamed, ulcerated in parts, and in one spot were gangrenous. Both horns of the uterus were greatly swollen and ulcerated, and the internal lining was covered with a muco-purulent coating. The spleen

was greatly enlarged, being 12½ inches long and its weight 270 grammes. On section numerous hemorrhages were evident. The liver showed a general yellowish tinge (icterus). The bloodvessels of the stomach and mesentery were injected. The lungs were œdematous. The left ventricle of the heart was much dilated, and a thrombus was found adhering to the mitral valve.

The microscopical examination of the organs by Dr. G. P. Biggs is appended.

Heart. The muscle-fibres were found to be very granular and contained a few minute fat-globules.

Kidneys. The lesions found in these organs were those of an acute diffuse nephritis of moderate severity; the epithelial cells of the tubules were in various stages of degeneration, some being completely necrosed, some containing large fat-globules, and some simply swollen and granular. The lumena of some of the tubules were filled with cast-off cells and coagulated albuminous material. These changes were most advanced in the convoluted tubules; a few casts were found in the straight tubules. There were numerous areas of small round-cells in the stroma between the tubules, and the organs were congested throughout. A small amount of albuminous exudate was seen between the glomeruli and their capsules.

Liver. The liver showed marked passive congestion and parenchymatous degeneration.

Intestines. The mucous membrane was swollen and the cells were so degenerated that they would not take nuclear staining. A moderate number of small round-cells were found in the deeper parts of the mucosa and the more superficial parts of the submucosa. Similar cells were seen in the external muscular layer and in the connective-tissue between the external and internal muscular layers.

Uterus. The mucous membrane varied much in thickness, but presented everywhere the same character of lesion. The vessels were engorged with blood and the tissues in places the seat of hemorrhages. Small round-cells were abundant between the few remaining tubules of the endometrium. That the entire thickness of the wall was involved by the inflammatory process was shown by the presence of small round-cells in large numbers in the submucous and muscular layers.

Cultures from the spleen remained sterile, showing pretty conclusively that the germs producing the endometritis and

peritonitis did not invade the system at large, the lesions of the other organs being due to toxic products manufactured at the site of infection.

The anatomical diagnosis is, therefore, suppurative metritis and endometritis, acute sero-fibrinous peritonitis, ulcerative gastro-enteritis, acute hyperplasia of the spleen, acute diffuse nephritis, parenchymatous hepatitis, œdema of lungs, parenchymatous degeneration of the heart, and thrombus of the mitral valve.

IMPERFORATE ANUS WITH FALSE OPENING: ANUS VULVALIS.

BY J. T. DUNCAN, M.D., V.S.,
PROFESSOR OF ANATOMY, ONTARIO VETERINARY COLLEGE.

This interesting abnormality, viz., the opening of the intestine into the vulva, and the passage of the feces through the cavity of the vulva, is a rare one in the full-grown animal, not, however, so uncommon in the young.

Fleming,[1] under the heading of "imperforation of the anus," thus speaks of the condition: "In young female animals in which the rectum (anus) is absent it often happens that the intestine opens into the vagina, and the feces are expelled through that passage."

In discussing or reporting cases of this peculiarity it will be well to come to some agreement as to terms, there being a good deal of looseness at present in this matter. First, in reference to the name to be adopted. From among the names used I have selected two for the head of this article, but the first is cumbersome and indefinite, the latter short and explicit. I shall therefore take the latter as the preferable term or name.

What do we, as veterinarians, understand by the term vulva? The vulva is a passage extending from the hymen anteriorly to the labia posteriorly, being (in the mare) about five inches in length. The vagina, on the other hand, is a passage extending from the os uteri to the hymen. We speak then of anus vulvalis because the intestine opens into the cavity of the vulva. In those extremely rare cases in which the intestine does open into the vagina (*i. e.*, when the opening is more than five inches from the labia) the term anus vaginalis would be allowable.

[1] Veterinary Obstetrics, by Dr. G. Fleming, Am. ed., 1881.

Cases of anus vulvalis are comparatively common in the young, but extremely rare in the full-grown animal. The reason for this is twofold; First, many young animals, by an operation, have communication established between the intestine and the anus, the false opening into the vulva then closing up. Secondly, many young animals, not operated upon, perish in early life. A third reason might be added, viz. some of the operations are not successful, resulting in death.

The condition, rare though it be, should be more clearly understood than it is, and if all the members of the veterinary profession were to publish, in the various veterinary journals, cases coming under their notice, with the results of operations performed, the profession would soon be in possession of valuable data in regard to it. It may be of interest to glance, for a moment, at the subject in connection with the human species. Medical men have placed many cases of this abnormality on record; the vast majority, however, being in infants. The opening into the vulva, in some of these cases, was a mere pinhole in point of size; in others it was double; and in still others the intestine opened into the anus in a normal manner, but it also opened into the vulva, the feces escaping, of course, in both directions. In some no sphincter could be discovered. In such cases the patient is unable to control the lower bowel; in other words, there is incontinence of feces. Most of those infantile cases are successfully operated upon, but some are allowed to go without anything being done. If the vulval opening be large and controlled by a sufficient sphincter, the adult condition may be attained in good health.

The manner in which this abnormality is produced is essentially the same in the human being and in the lower animal. A brief reference to the development of the intestine will help to the understanding of it. Speaking now of the lower animals, the intestine in early fœtal life is a tube, closed at both extremities. There is at first no appearance of a mouth, nor yet of an anus; but a depression appears at each extremity of the embryo, the one in the position of the mouth, the other in that of the anus. Both of these cavities or pouches are lined by common integument, and both are separated from the intestinal tube by a septum more or less thick. By the development of the intestinal tube and the deepening of the cavities just spoken of, the septa are caused to disappear, and the tube is now open from end to end. The cavity at the posterior extremity has opening into

it not only the intestine, but the generative and urinary passages. It is, therefore, a chamber common to all three systems, and may be spoken of as a cloaca.

Gradually the cloacca is subdivided by the growth of a transverse plate or band of integumental tissue. Above this plate lies the intestine, opening at the anus; below, the cavity of the vulva. The plate, if complete, entirely separates one from the other. If, now, invagination of the integument has not taken place above the transverse plate (or not to a sufficient extent), and the plate itself is not complete, we can very readily understand how the condition is that of anus vulvalis.

I. FRACTURE OF THE TRAPEZIUM, OR RUPTURE OF ONE OF THE TENDONS ATTACHED TO THAT BONE. II. PERITONITIS.[1]

BY DRS. MARSHALL AND DIXON,
CHARLOTTESVILLE, VA.

Case I. Bay gelding, four years old, previously sound; ridden along country road at a canter, suddenly pulled up dead lame. Found swelling all around the knee; could not put his foot to the ground.

Diagnosis. Either fracture of the trapezium, or rupture of one of the tendons attached to that bone.

Treatment. Hot fomentations, contined for several days afterwards, followed by cold sprayings. Inflammation having subsided, blistered, which was repeated as soon as possible, colt being in the stable all the time.

Shortly after second blister was turned out and not seen for about three weeks—was then found that the swelling at the trapezium was much larger and appeared to be of an osseous nature. Horse still lame.

Case II. Chestnut colt, two years old. Altered by a castrator three weeks previously. When called, owner stated that he could not urinate, and was continually straining. Colt appeared very weak and stiff, unable to turn and in great pain; pulse hard and quick; straining a great deal, but saw him make water; on rectal examination found soft, pulpy tumors.

[1] Reported to the Virginia State Veterinary Medical Association, June 18, 1895.

Diagnosis. Peritonitis, with other lesions of the rectum which I was unable to diagnose.

Treatment. Advised the owner to kill, as I told him the animal could not live till morning. He, however, declined. Arrived next morning and found that the animal had died during the night.

Post-mortem. On opening found the left cord swollen, and part of the epididymis, which was so large that it was mistaken for a small testicle. On following the cord found continuous suppuration and finally came upon a large abscess, which was apparently discharging into the rectum. On opening the sac over a pint of pus escaped. The rectum was then laid bare and and on the mucous membrane were found a number of gelatinous tumors, varying in size from a pea to a hen's egg, chiefly in the lower part. The peritoneum and intestines were much inflamed and a great quantity of effusion escaped in opening the abdominal cavity, Little or no change was observed in the thoracic cavity.

THE USE OF PYOCTANIN IN THE TREATMENT OF QUITTORS.

BY DR. WILFRIED LELLMANN,
NEW YORK CITY.

ALTHOUGH the treatment described in this article has been followed by me in but a few cases, its invariable efficacy seems to me a sufficient warrant for its publication at this time.

The first thing I do is to apply a lukewarm foot-bath of a 1 per cent. solution of lysol. Then, after having examined the fistulous wound or wounds thoroughly with a probe, I introduce a bistoury, provided with a knob at its point, as deeply as possible and make a good cut as the bistoury is drawn outward. If only one fistula is present, I prefer to make a vertical and a horizontal cut, which meet at right-angles. If more fistulæ are present, I either connect them by cutting or make counter-openings, introducing drainage-tubes, but I must say that I prefer cutting. After this has been done I introduce a tampon of oakum, soaked with a 10 per cent. alcoholic solution of bichloride of mercury, put a well-pressing bandage on and leave it there for twenty-four hours. Now the fistulous wound has become large enough, and I commence at once with injections

of a 10 per cent. alcoholic solution of pyoctanimum cæruleum. This is a pure aniline color, a methyl-violet, a blue scentless powder, which dissolves very easily in water and alcohol. It is non-poisonous, of great antiseptic power, and very siccative. Pyoctanin seems to have the peculiarity besides, to thrust off tissue which has undergone necrosis. After a few injections I am usually able to remove parts of the necrosed cartilage with forceps. Twelve to fifteen injections were sufficient; that during the first four or five days I made two injections daily, thereafter only one injection daily, but after each injection I tamponed the wound and applied a well-pressing bandage. After the injections have been applied I syringed the wound for several days with a solution of iodoform in ether, 1 : 7. After this treatment the wound or wounds became dry and did not show any more secretion. Now to accelerate the healing I introduced suppositories in the fistulous wounds and keep in position by a well-applied dressing.

The prescription of the suppositories I use is the following:

Bismuth. dithio. salicylic,
Butyr. cocæ et,
Lanolin. q. s. f. l. a. Bacilli suppositorii,
Longitudine cm. crassitudine cm.

Bismuthum dithio-salicylicum, so-called thioform, is a new substitute for iodoform, and is greatly to be preferred to the latter. Thioform is a very light, fine and scentless powder of gray-yellowish color, insoluble in water. It is non-poisonous, and does not cause any irritation. In short, it seems to be superior to iodoform. When great swelling combined with a large defect of skin is present, as I saw it in several cases, I used bismuthum subgallicum, so-called "dermatol," with very good effect.

With the treatment above mentioned I had very good success. Although there was great lameness in all cases, the horses after this treatment could be put to work after two weeks and a half.

The shoes I prefer for horses with quittors, are plain, well-fitting, bar shoes, so as to remove weight and pressure from the seat of the injury. After the horses were put to work I left a good dressing, covered by a leather boot, for a week longer, so as to keep it clean and prevent interference with the injured part.

It is self-understood that in case a quittor is caused by pricks in shoeing or by suppurating corns, an opening must be made at the sole sufficiently wide to allow the free discharge of the contained pus.

I think, if the above-mentioned treatment is applied in a thorough way, it will be satisfactory in every point and will act even better and in shorter time than the operation, which can be performed only under certain circumstances, while this treatment seems to be feasible under any conditions.

I will not say that this treatment is the best; it may be that luck has been favorable to me during the treatment of the latest cases of quittors. The reason why I publish my treatment is the following:

For a great many veterinarians the treatment of quittors has been an ungrateful task, because the treatment lasted eight to ten weeks or even longer, often several months. By this time a great many horse-owners become impatient and they very often toward the end call on another veterinary surgeon, or, what is worse, they themselves commence to treat or consult a quack and he gets all the credit for it.

The cause of this certainly is to be seen in the continuous necrosis and suppuration of the cartilage. When we treat a fistulous wound in a right way, according to the principles of surgery—that is, when we cut the fistulous wound so as to change it into an incised wound, and allow free and fast escape of the contained pus, and remove the necrosed parts, which always keep up the suppuration and prevent the healing,—success most probably will show itself soon.

Now, I think that I have found in the 10 per cent. alcoholic solution of pyoctanimum cæruleum a remedy which I certainly will not claim to be a specific remedy, but which accelerates the thrusting off of necrosed tissue in a rapid way; besides, it is very destructive to staphylococci and streptococci, of siccative power, and seems to influence phlegmonous swellings in a very favorable way.

Although I have had good success in treating quittors with a 10 per cent. alcoholic solution of bichloride of mercury I prefer pyoctanin[1] because it is not dangerous. There are cases of quittors which I would not dare to treat with a 10 per cent. solution of bichloride of mercury, so highly recommended.

In conclusion, I would like to recommend this treatment to my colleagues, and I trust that they will find it very effective, if applied in the proper way.

[1] An objectionable feature in handling a solution of pyoctanin is its tendency to stain the fingers an intense blue, which, however, can easily be removed by "spiritus saponatus." I prefer to use a rubber glove while making injections.

CORRESPONDENCE.

WHY NOT MAKE THE VETERINARY DEGREES UNIFORM WITH THE ACADEMIC DEGREES? A SUGGESTION FROM A NON-VETERINARIAN.

EDITOR OF JOURNAL OF COMPARATIVE MEDICINE, ETC.

DEAR DOCTOR: Although not a veterinarian myself, the discussion which is being carried on in the veterinary journals upon the subject of veterinary degrees has interested me considerably, and, even at the risk of laying myself open to the charge of meddling with affairs which do not concern me, I venture to express my views upon this subject in order to show how the matter strikes one who, although outside the strict confines of the veterinary fraternity, is brought into constant contact with its members, both professionally and personally, and who is as anxious as any veterinarian to see the fraternity united and raised to the highest standard.

As a fundamental principle I think we can all unite upon the grounds that, first of all, the veterinary degrees should, so far as possible, correspond with the degrees in other lines of work; also that the degree should be a Latin degree, both as an expression of its scholastic value and in order to make it uniform with other degrees.

Let us look for a moment at the degrees in other lines of study. When a student completes a prescribed course of study in an academic college he receives the degree *bachelor* of arts, or science, or philosophy, etc., as the case may be. If he continues his work as a post-graduate for one year, or, as is the case unfortunately in many colleges, even if he does not continue his studies, he receives the degree of *master* a year after the degree of bachelor. If he continues post-graduate work for two or three years and then submits a thesis covering original work and passes a rigid examination, he receives the degree of *doctor*.

What do we find now among the veterinarians? We not only find veterinary colleges conferring the degree of *doctor* upon men who have taken a prescribed course of study for only two years, without ever having made a single original observation in their work, or without ever having added an iota to the

advancement of their profession, but still worse, we find men who have received the degree of *veterinary surgeon*, etc., but have never received the degree of *doctor*, assuming the title of *doctor* and acting the lie.

First and foremost, I wish to enter a protest against this assumption of the title *doctor* by men who have not received that degree. A *V.S.* has no more right to use the title *doctor* than he has to use the title *senator* or the *A.B.* or *B.S.* has to use the title *doctor of philosophy* or *doctor of science*, and these title-kleptomaniacs are simply lowering themselves in the estimation of the educated classes by their presumptuousness. Suppose every graduate of Yale, Harvard, Princeton, Wesleyan, Amherst, Georgetown, and other colleges who received an *A.B.* should dub himself "*Doctor!*"

How would I obviate this difficulty? By simple principles of honesty. Let every man pose for exactly what he is. If he is a *Mr.* let him use that title, and in reality it is as good a title as any other. If he is a *Dr.* let him use that title with dignity and modesty, and not consent to be "Doc" (ked).

To unify the veterinary degrees of this country is no simple matter, for we find degrees conferred for different amounts of work. Looking over the general field, however, the following occurs to me as being a just arrangement, and I do not see that it would be very difficult to carry it out:

To the student who takes a two years' course at an *agricultural college* and brings in veterinary medicine as a secondary branch, no degree in veterinary medicine should be given, for his veterinary studies are incidental. If, on the other, hand he takes veterinary medicine as *major work*, he is entitled to a degree in that subject, and as such degree I would suggest simply "Veterinarian," the Latin form being *Veterinarius* (cf. Columella, a writer on husbandry, A.D. 50).

For the student who is graduated from a veterinary college after a prescribed course of study I would suggest the degree of "Bachelor of Veterinary Arts" (V.A.B.), the Latin form of which would be *Veteriuariarum Artium Baccalaureus*. This degree would thus correspond to the degrees A.B., Ph.B., S.B. (or B.A., etc.), conferred by academic institutions.

For the V.A.B. who takes a post-graduate course of one year at a veterinary college and then submits a thesis, or to the V.A.B. who completes two years of practice and then submits a thesis, I would suggest the degree "Master of Veterinary

Arts" (V.A.M.), the Latin form of which would be *Veterinariarum Artium Magister*. This degree would correspond to the Master of Fine Arts (*Bonarum Artium Magister*) of the academic colleges.

For the V.A.M. who completes three years of post-graduate work at a veterinary college or a university (*i. e.*, two years more than is required for the V.A.M.), and who then submits a thesis covering original investigation and passes a rigid examination, or who has spent six or eight years in practice after graduating with his V.A.B., and then submits a thesis covering original work and passes a rigid examination, I would suggest the degree of "Doctor of Veterinary Arts" (V.A.D.) *Veterinariarum Artium Doctor*, which would thus correspond to the degrees "Doctor of Philosophy" and "Doctor of Science" conferred by universities.

The expression "*Veterinariarum Artium*," which I have used above in the plural, is open to some objection on account of its length, and it would perhaps be better to use the singular *Veterinariæ Artis*, which would be admissible, since the singular is sort of a collective noun and would include all the branches of science requisite for the veterinarian. The three degrees would then read:

Veterinariæ Artis Baccalaureus.
Veterinariæ Artis Magister.
Veterinariæ Artis Doctor.

In the foregoing scheme I have followed the plan of the academic rather than the medical degrees, as the title Doctor of Medicine in this country represents so many different degrees that it is practically simply means that the man who has it has been graduated at a one, two, three, or four-year medical school. The academic degrees of the country are, on the other hand, much more uniform. Furthermore, the Doctor's degree conferred by American medical colleges is not equivalent to a *Doctor's* degree at all, but is in reality a *Bachelor's* degree, and I believe the degrees of medical colleges need a revision almost as badly as the degrees of veterinary colleges. As I am here discussing veterinary degrees, however, I will not enter further upon the subject of the medical degrees.

It may be a matter of surprise that I suggest the term Veterinary Arts, instead of Veterinary Medicine or Veterinary Science. The suggestion, however, meets several points which have given

rise to discussion and disagreement heretofore; some persons have claimed that surgery is not medicine, and on that account objected to the title "Veterinary Surgeon," while others submit that medicine, strictly speaking, does not include surgery, and hence object to the combination "Doctor of Veterinary Medicine." While I consider both of these views extreme, the combination "Veterinary Arts" would offer a middle ground upon which all could probably unite. Furthermore, the practice of surgery and medicine is in reality an art, a practical application of various sciences to a given object, and is not of itself, strictly speaking, a science, on which account I object to the degree "Doctor of Veterinary Science." There are indeed veterinary sciences (which are the same as the medical sciences), *i. e.*, chemistry, physics, zoölogy, botany, etc., but, strictly speaking, there is no "Veterinary Science" *per se*.

Precedent exists in this country for the use of the word art in medical degrees, for upon a diploma which I have recently seen, awarded by the Medical School of the University of Pennsylvania, I noticed the expression *Doctorem in Arte Medica*.

Some of the gentlemen who have been discussing the subject of veterinary degrees forgot to consult their lexicons, and their memories have led them into slight errors regarding the Latin forms of the word Veterinarian, etc. In order to clear up this point I take the liberty of giving the various Latin words for which authority exists. *Veho, vehere, vexi, vectum*, a verb of the third conjugation, means "*to bear, carry, convey*, on the shoulders, by wagon, by horse, by ship, etc." From this verb we have the adjective *veterinus, a, um* (cf. Sext. Pompeius Festus-a grammarian about (?) A.D. 150), which means "of or belong, ing to carrying or drawing burdens." With *bestia* (Latin for beast, as a being without reason; opposed to man; while animal—a living being, includes man) it is translated "a beast of burden or draught." The feminine substantive *veterinæ, arum*, and the neuter substantive *veterina, orum*, refer directly to "draught-cattle," "beasts of burden" (cf. Varro, a writer on husbandry, B.C. 27, and Plinius, a naturalist, A.D. 79).

The adjective *veterinarius, a, um*, means "of or belonging to beasts of burden and draught." Combined with the feminine noun *medicina*, it means "farriery" (cf. Columella, A.D. 50).

In combination with the Latin *ars, artis*, feminine ["skill in producing any material form, handicraft, trade, occupation, employment," and, "with the idea extended, any physical or mental

activity, so far as it is practically exhibited, a profession, art, (music, poetry, medicine, etc.")], it means " the art of healing domestic animals;" cf. P. Vegetius (A.D. 420), *De Arte Veterinaria sive de Mulomedicina.*

As substantive *veterinarius* (*ii*, masculine) means "a cattle doctor, farrier, veterinarian" (cf. Columella). *Veterinarium* (*ii*, neuter noun), however, means "a place for taking care of diseased animals;" cf. Hyginus (Gromat.), writer on surveying, A.D. 100.

From this explanation of the Latin terms, which anyone can verify if he will look them up in a Latin dictionary (Harper's, for instance), it will be seen that the combination, "Veterinary Art," can be traced back to A.D. 420, when Vegetius used it in the sense I propose it in the veterinary degree. "Veterinary medicine" is a much older combination, but, according to Harper's *Dictionary*, Columella (A.D. 50) used it referring to "farriery."

The plan I propose above is a radical change from the present veterinary degree, I admit, but some radical change is evidently called for.

The question naturally arises, What are all of the men to do who already have degrees? A most simple solution and one to which I cannot see the slightest objection would be for the colleges which conferred these degrees to give a new diploma with the new degree upon surrender of the old diploma, a method of procedure for which precedent exists.

The foregoing suggestions are made with all due modesty, but, as I do not possess a veterinary degree of any kind, I think I can claim they are not based upon partiality, but simply upon a friendly desire to make veterinary degrees correspond with other degrees and to have the veterinary degree carry some definite meaning with it.

Very respectfully yours,

CH. WARDELL STILES, A.M., PH.D.

WASHINGTON, D. C., July 23, 1895.

The greatest dog-owner in the world is Gustav Javanovitch, the cattle-king of the Russian steppes, who employs thirty-five thousand shepherd dogs of various breeds for his one million five thousand sheep.

Preparations for the first examination in New York State are nearly completed.

EDITOR JOURNAL OF COMPARATIVE MEDICINE, ETC.

DEAR SIR: I find in your June number of the JOURNAL an anonymous communication concerning myself? I might be justified in treating that article with the contempt that anonymous articles deserve and usually receive. If the writer believes that he is telling the truth, why should he withhold his name? But an anonymous communication when given to the entire profession by a publication so well known as THE JOURNAL OF COMPARATIVE MEDICINE AND VETERNARY ARCHIVES, may do considerable injustice. I therefore make a refutation of the false statements and innuendos contained in that article and desire that it be given as wide a publicity as the article itself has had.

The article contains one or two statements that are founded in fact, but the tenor of the whole is misleading. I have already answered the article contained in the April number, and have shown the falsity of its statements and the meanness of the spirit which actuated the making of them.

From reading the anonymous communication it would appear that Dr. Carpenter was being tried instead of Dr. Archibald. How could the trial "be deemed an auspicious occasion to expose Dr. Carpenter" when Archibald's entire defense was based upon the plea that he was not the author of the statements contained in the resolutions which libelled Dr. Carpenter? He claimed that he was only acting as the agent of the association in writing and sending out the resolutions; the whole matter was hearsay with him; that he knew nothing personally as to the truth of the statements contained in the resolutions. The jury acquitted him because they thought that an officer of an association who should write and send out resolutions passed

by the association should not be punished for the acts of the association. That was the position taken by Archibald and his attorney.

There was not a particle of testimony produced at the trial which would establish the truth of the libellous statements in the resolutions. Every witness for the defense claimed that he knew nothing about the matter, that all he knew was hearsay. The statement "that much testimony was introduced by the defense regarding the position Dr. Carpenter had taken toward the association in the past, all of which he positively denied on the witness stand," is entirely untrue. The only thing introduced in evidence regarding my position in the past toward the association was the article which was published in the January number, 1889, of the *American Veterinary Review* over my signature. The further statement in the June article, that "he even denied having anything to do with a protest against a certain bill in the Legislature," is correct. That protest was not scandalous, as he says, but foolish. My name was appended to it in print without my knowledge or consent, and I never signed the protest. There would be nothing in the act of signing it except that the protest was foolish and useless. There was no attempt made at the trial to show that the protest was written over my signature. The protest was not introduced at the trial, because it was immaterial and irrelevant, and was not offered in evidence. I was merely shown a printed copy of the protest and asked if I had signed it. This anonymous writer must have known that the statement inferentially made in his communication, "that it was seldom that a man had his character exposed as was the character of the prosecuting witness," was absolutely untrue. There was no attempt to attack my character; the defendant had all he could do to protect his own. This writer closes up his article by making the following statement: "It might also be interesting to state that Dr. Carpenter did not gain the position of meat and milk inspector of the city of Oakland." That is true. But why make the statement? I never was an applicant for the position. He might with as much propriety say that I was not appointed inspector for the city of New York. The spirit of the anonymous article is unfair and unjust, and could only be written by one who dared not attach his name to the article.

T. CARPENTER, V.S.

JULY 22, 1895.

LEGISLATION.

Massachusetts.

Summary of the Law of Massachusetts in Relation to the Suppression of Contagious Diseases Among Domestic Animals.

The laws covering this matter were passed in 1894–95. Under the laws the entire supervision and control is placed in the hands of the board of five Cattle Commissioners, appointed by the Governor, each for a term of three years.

The Commission as a board have control of the entire State, and are given power to make orders and regulations covering the importation and quarantine of cattle, the transportation and treatment of cattle within the State, the matter of quarantine of suspected cases of disease, and the disinfection and cleaning of premises, and are given generally the power to take all steps necessary or expedient to suppress or prevent the introduction of contagious diseases among domestic animals, including glanders, farcy, contagious pleuro-pneumonia, tuberculosis, Texas fever, foot-and-mouth disease, rinderpest, hog cholera, and rabies, and such other diseases as the Commission may deem to be contagious.

Besides this general power vested in the Commission, each member thereof is individually given the power to enter all premises for the purpose of inspection, to condemn and destroy diseased or unwholesome meat and carcasses which they may find; to quarantine and examine all animals suspected of being affected with or having been exposed to contagious disease, and, if they find them diseased, to cause such animals to be destroyed and safely disposed of, and in such case no compensation is paid to the owner of the animal destroyed, unless it is destroyed as having been affected with tuberculosis. When such animals are killed, the full value at the time of condemnation, not exceeding the sum of $60, is to be paid by the State, provided the animal has been owned within the State six months continuously prior to its being killed, and also provided that the owner has not wilfully contributed to the spread of the disease. This is a change over the law of 1894, in that under that law the State paid one-half the value at the time of killing,

without taking into consideration the fact that the animal was affected with the disease for which it was condemned.

The value of the animal is to be determined either by agreement with the Commissioners or by appraisal of two arbitrators, one to be selected by the Commission and one by the owner. These appraisers are required to be sworn. If the owner is not satisfied with the appraisal, or with the action of the Commission in destroying his animal, he is given the power to appeal to the courts to determine the existence of the disease and the value.

Besides the Cattle Commissioners, appointed by the Governor, there are local boards of health within each city or town, selected or appointed by the voters or city and town authorities. The boards are given the general control of the matter of contagious diseases among the animals in their city or town, and it is made their duty to see that all outbreaks of disease are suppressed, and that suspected cases are quarantined promptly and reported to the Commission. They are bound by law to obey all lawful orders and regulations issued by the Cattle Commission or any of its members. They are given power to make regulations within the limits of their city or town, to prevent the spread of contagious diseases among domestic animals, and to quarantine animals. Such quarantine must continue until removed by them or by the Cattle Commission or some of its members.

It is made the duty of every person within the State, who suspects or has reason to believe the existence of contagious disease among animals, immediately to report it to the Board of Health of their city or town. The Board of Health are to cause the animal to be examined immediately by an inspector or competent veterinarian, and, if the animal be diseased, to report it to the Cattle Commission.

There is a third class of persons appointed throughout the State whose business it is especially to watch outbreaks of disease. These are local inspectors, each city or town being required to appoint one or more such annually. The compensation of these inspectors is paid by the city or town, except that in cities or towns of less than $2,500,000 valuation, the State pays one-half of the compensation of such inspector, this being a new provision passed at the last session of the Legislature. These inspectors are required to be sworn, are made the agents of the Board of Health, and are bound under penalty

to obey all orders and regulations of the Commission. It is made their duty to make a regular inspection of all neat cattle, sheep, and swine within the limits of their city or town. Prior to this year such inspection only related to neat cattle. They are also directed to inspect all other animals where they suspect that disease may exist, and also to inspect the stables and premises where domestic animals are kept. Upon their inspecting such animals, if they suspect any of them to be diseased, it is made their duty immediately to quarantine such animals by serving written notice of such fact upon the owner or person in possession, and also to send a copy of such quarantine order immediately to the Board of Cattle Commissioners, and give notice to the Board of Health of the city or town. These inspectors have no power to remove quarantine imposed by them. In case of the inspection of neat cattle, sheep, or swine, if they find no disease to be present, it is their duty to give the owner a certificate of such fact.

Prior to this year the expense of all quarantine was required to be borne by the owner; but under the recent law, where specific animals are quarantined, and the owner is forbidden to sell the product, the State bears the actual expenses of the quarantine after the tenth day from the imposing of such quarantine.

The proprietors of all slaughter-house establishments engaged in the business of slaughtering neat cattle, sheep, or swine are obliged to take out a license, which license permits them to slaughter upon particular days. It is made the duty of the local inspector to be present on these days, and to inspect, at the time of slaughter, all neat cattle, sheep, and swine, and, if he finds them to be affected with a contagious disease, to seize and destroy them; for which the owner receives no compensation. Prior to this year no such inspection was required in the case of sheep and swine.

Owners not regularly engaged in the business are allowed to slaughter any of their neat cattle on their own premises without a license; but in such case they must have an inspector present to inspect the animal which is to be dealt with, the same as in case of animals slaughtered at the slaughter-house. If the animal is less than six months old, or has received a certificate of health from an inspector within six months, such animal may be slaughtered by the owner on his own premises without such certificate.

Under the law existing prior to the act of this year the

matter of the inspection of animals was left entirely within the control of the Commission. They were to determine the method to be used in making these inspections. Under this law the Commission determined that the only reliable method of detecting tuberculosis was by the injection of tuberculin. This inspection was made entirely by the board of agents specially appointed by them for that purpose, and was not put into the hands of the local inspectors. Under this regulation all animals quarantined as suspected of tuberculosis were tested with tuberculin ; and, in addition to this, the board began a systematic examination of all animals in the State, beginning by quarantining such animals by counties, testing the neat stock within the limits of each county with tuberculin, freeing those found to be exempt from the disease, and destroying those found affected with it. Under the law passed at the recent session of the Legislature, it was provided that "until the first day of June, 1896, the use of tuberculin as a diagnostic agent for the detection of the disease known as tuberculosis in domestic cattle shall be restricted to cattle brought into the Commonwealth from any point without its limits, and to all cattle held in quarantine at Brighton, Watertown, and Somerville ; provided, however, that tuberculin may be used as such diagnostic agent on any animal or animals in any other portion of the State, upon the consent in writing of the owner or person in possession thereof, and upon any animals condemned as tuberculous upon physical examination by a competent veterinarian." Under this restriction the Commission have been obliged to abandon the systematic examination of cattle. They still require all animals coming into the State to be so tested, unless they enter the State accompanied by a proper certificate that they have successfully passed such tuberculin test. All animals quarantined as tuberculous, on physical examination, are also subjected to the tuberculin test, and tests are made upon written application of the owner.

In brief, the only changes effected by the law of this last year are to extend the regular examination of sheep and swine, to provide for the payment of quarantine expenses in certain cases after ten days, to provide for the payment of the full actual value of animals destroyed as tuberculous, in place of paying one-half the sound value, and to retrict the use of tuberculin.

For the purpose of carrying out this law for the entire year of 1895, the Legislature appropriated the sum of $150,000.

F. H. Osgood, M.R.C.V.S.

NEW YORK STATE BOARD OF MEDICAL EXAMINERS.

THE first meeting of the State Board of Veterinary Medical Examiners was held in the Regents' office at the Capitol, in Albany, July 25, 1895. The Board was organized by the election of Professor James Law, of Cornell University, President, and William H. Kelly, of Albany, Secretary.

After discussion the subjects were grouped as follows: 1, anatomy and surgery; 2, physiology and hygiene; 3, chemistry. therapeutics, and materia medica; 4, obstetrics; 5, pathology, diagnosis, and practice.

By the President's appointment the members of the Board were assigned chairs as follows: Dr. R. S. Huidekoper, anatomy and surgery; Dr. C. D. Morris, physiology and hygiene; Dr. N. P. Hinkley, chemistry, therapeutics, and materia medica; Dr. W. H. Kelly, obstetrics; Professor James Law, pathology, diagnosis, and practice.

It was resolved that a syllabus be drafted, each member of the Board to prepare that part of the same which pertains to his chair, and the first draft to be submitted to the Regent's office before August 4th.

It was voted that at the meeting of the Board in September, which, it is understood, the President shall call about the 5th, each member is to submit to the Board a set of fifteen questions on each of the following subjects: 1, comparative anatomy; 2, chemistry; 3, obstetrics; 4, therapeutics and materia medica; 5, physiology and hygiene; 6, veterinary surgery; 7, pathology, diagnosis, and practice.

It was voted that Dr. R. S. Huidekoper be the questions editor, and that proof of all questions for examinations be submitted to him before they are finally printed by the Regents.

It was voted that at the September meeting each member shall bring a list of the veterinary schools and colleges which he deems worthy, by reason of prescribed courses of study, to be registered by the Board.

It was voted that the whole Board shall act as a committee on examination questions.

It was voted that in the intervals between the meetings of the Board any decision or resolution signed by all the members of the Board shall be official.

The meeting adjourned subject to the call of the President.

EDITORIAL.

ASSOCIATION MEETINGS.

SEPTEMBER of this year will prove a phenomenal month for important veterinary association meetings, and we devote in this number a goodly portion of our pages to a brief prospectus of these very important gatherings. Many of them are to be held just prior to the annual gathering of the U. S. V. M. A. at Des Moines. Commencing with Pennsylvania, then Missouri, New York, Iowa, and California, with several local associations, which promise that the winter's work shall be well begun.

These various State meetings will all send delegates to Des Moines, and thus add strength and value to the national meeting. Many of the leading questions of the day will be discussed in home circles first and find their fruition at the parent meeting. Every veterinarian should at least attend his home gathering, and there aid in better equipping their representatives at Des Moines. The weight of influence represented by these various gatherings will prove a potent factor in strengthening every progressive movement in the many directions of work to which the national association has given impetus during the past ten years.

The question for each veterinarian to decide in regard to these meetings is not, Can I afford to go? but, Can I afford to stay away? Can I afford to lose the valuable papers and discussions that will come up? This is specially true in regard to the U. S. V. M. A., where for the first time in many years the major portion of the programme will be taken up by subjects of every-day practical importance to the routine practitioner.

UNIFORM VETERINARY DEGREE.

WE are glad to be privileged this month to publish a very important communication on the subject of a uniform degree or title for the veterinarian from so able, impartial, and yet interested writer as Professor C. W. Stiles. It comes to us at an opportune moment, on the eve of the consideration of this subject at the meeting of the Association of Veterinary Faculties at Des Moines, on the evenings of September 10th and 11th.

EDITORIALS IN "AMERICAN VETERINARY REVIEW," AUGUST, 1895.

It is not often that we honor with notice any articles of a personal nature or that we consider it within our dignity to enter into any personal controversy, but certain editorials in the August number of the *American Veterinary Review* (which undoubtedly reaches a certain number our readers) are so misleading in their statements that we feel called upon to correct them.

Under the article, "Veterinary Educational Progress(?) in New York State," the *Review* states that the Board of Regents "very properly applied to the official representative of the profession in the Empire State, and so the New York State Veterinary Medical *Association* was *asked* to nominate ten members," etc. If the *Review* will read the plain English of the law it will learn that the law *requires* the nominations to come from the New York State Veterinary Medical *Society*. There were, therefore, no option on the part of the Board of Regents. Considering that Dr. Hinkley is the only editor whose name appears on the cover of the *American Veterinary Review* whoever attended more than one of the meetings of the State Society, it is not to be wondered at that the *Review* did not know the proper title of the *Society*.

The *Review* states that "one of the plainest propositions to those who had contemplated the new law was that certainly no member of the faculty of any school," etc., etc. Will the *Review* inform us, who connected with it (Dr. Hinkley excepted), or with the American Veterinary College, ever spent one minute or one dollar in aid of the recent legislation in New York State? On the contrary, can the *Review* deny that one of its editors, not an American citizen, did not use endeavors to interfere with the recent legislation at Albany?

If but "a handful," as the *Review* terms them, came to the special meeting of the New York State Society, that handful represented the men through the State who for years have been spending time and money in the advancement of the Society.

The *Review* states that, after a recess, the meeting rescinded a resolution of the morning session before "*certain opponents*" had returned to the hall. The *certain opponent* who interfered

with the morning session of the special meeting and did not return to the afternoon session was, as the *Review* may *not* know, a person who had not paid his dues to the Society for several years and who was not eligible either to speak or vote at the meeting. Any "mischief done legally" was the carelessness of the President and Secretary in not remembering that said *certain opponent* had no rights at the meeting, and in their courtesy to him as an old man.

The *American Veterinary Review* may be accustomed to associate with a class of men who, because they are interested in one lot of students, cannot be honest and just in their examination of others. We, in our acquaintance among teachers in many colleges, and in our friendship in the New York State Veterinary Medical Society, fortunately know a class of men whom we know to be honest under any circumstances and in whom we can repose a trust, as has been done by the New York State Society.

In another editorial, a sequel of one which appeared a month or two ago, the *Review* addresses its subscribers and pleads charity from them on account of the difficulties and financial trouble of a firm who published the *Review* and were part owners. Does the *Review* forget its origin? The *Review* was originated by the United States Veterinary Medical Association. During the first years of the *Review* its deficit in expenses was paid by the United States Association. When the *Review* had been established on a paying basis, at the expense of the United States Association, it was presented to Dr. Liautard free from debt, and with the friendship of every member of the Association. When it became the organ of a college and was transferred to the hands of the now defunct publishing firm and was again taken in hand by the college, it deserved just what interest and sympathy it merits on its present deeds, but none whatever as a business enterprise.

The editors of the JOURNAL have spent far more money for the benefit of the profession than the *Review* has ever done. The JOURNAL undoubtedly was careless in its publication under the last management, but not more so than were its subscribers in the payment of their bills. But to-day under the present liberal management, independent, as the name of Dr. Hoskins guarantees, from any influence but that of the general good of the profession at large, the JOURNAL can promise more liberal veterinary information than any other publication.

ANIMAL VACCINATION.

THE value of the various vaccine viruses on American soil will soon be measured from a practical point of view. The Pasteur Anthrax Vaccine Company, of New York, representing the parent company of Paris, France, have now a force of veterinarians working in the States of New Jersey, Texas, California, Kansas, Illinois, Florida, North Dakota, Colorado, New Mexico, Utah, Virginia, North Carolina, and Iowa. Some 2000 head of animals have been inoculated in the southern part of New Jersey alone by Doctors Hewitt and Tremaine. Its value in black-leg is being investigated at the experiment station in Nebraska.

Several of the leading veterinarians testing these vaccines have had considerable experience in sanitary bacteriological work, among them being Drs. Peters, of Nebraska; Gresswell, of Colorado; and Johnson, of Sioux City, Iowa.

Dr. W. J. Oliver, of Los Angeles, Cal., in March, 1894, vaccinated 190 cattle with vaccine from the Paris (France) laboratory, only one animal dying. At the Cerristor Ranch, 258 head, where over 40 had died prior to vaccination, but 3 dying subsequent to the test. The same herd with 100 head added has been vaccinated this year with no losses.

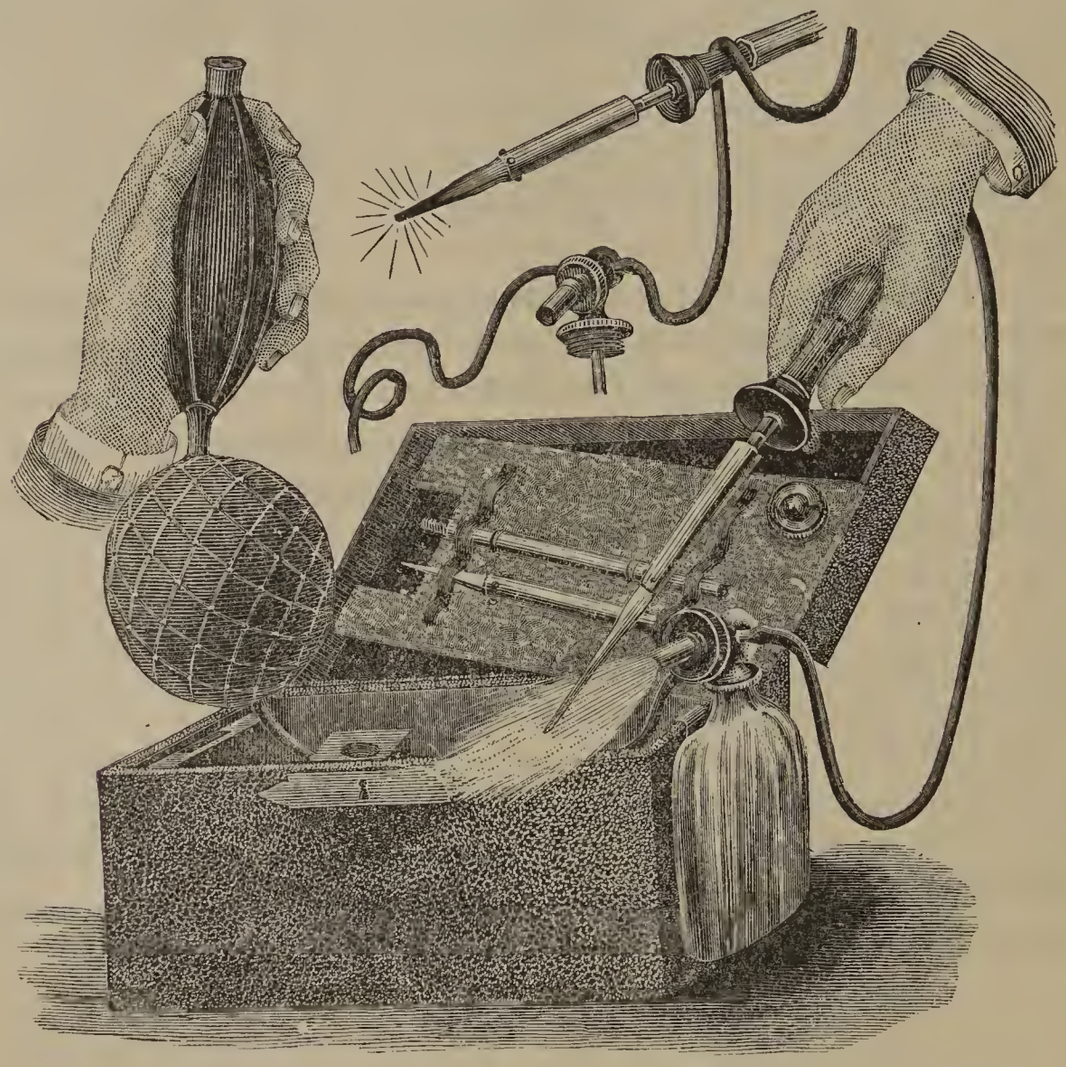
With so much territory now being covered, with all the variations of temperature, situation, and conditions, we should early arrive at results that will decide the permanent value of this method of dealing with these peculiarly fatal and rapidly decimating diseases of our flocks and herds.

TO OUR CONTRIBUTORS AND READERS.

WE regret exceedingly that we are forced to postpone the publication this month of an unusual amount of valuable and interesting material, though we are giving to our readers twelve pages extra of reading matter. Among the matter laid over are a number of original articles and many important selections, abstracts, and communications. We wish at this time to express to our contributors our warmest appreciation of their great kindness and assistance in aiding the new management of the JOURNAL, and thus contributing so much to the strengthening of American veterinary literature.

AN IMPROVED VETERINARY THERMO-CAUTERY.

We are pleased to be able this month, through the kindness of Messrs. Teuful & Brother, to display an improved thermo-cautery that covers many of the objections and annoyances of those now in use. It does away with the alcohol lamp, where



it formerly was necessary to heat the point and then in transferring the rubber tubes to the benzine reservoir lose the heat quite frequently. A combination benzine reservoir with blast-lamp attachment obviates the need of alcohol lamp, thus facilitating the rapid heating of cautery points and simultaneous injection of hydrocarbon gases into the heated platinum points. This is done by a simple and ingenious contrivance screwed on to the metallic benzine bottle. By regulating this valve attachment the platinum points may be kept at white or red heat as desired. The platinum points of firing-irons are made removable by unscrewing.

PERSONAL.

Dr. Leonard Pearson recently addressed a very large meeting of farmers in Lancaster County, on "Diseases Incidental to Dairy Cows."

Dr. F. B. Grenside, of Guelph, Canada, will remove to New York to take the general management of Mr. S. H. Harland's Belmont Stud.

The many friends of Veterinarian S. E. Weber will be glad to learn that he is slowly recovering from the very serious illness which has afflicted him for the past year.

Dr. J. C. Shaub, of Lancaster, was recently seriously injured by one of his equine patients striking him with his forefeet and kicking him after he was knocked down.

Dr. G. F. Harker, of Trenton, New Jersey, has been sent to investigate the extent and direct the control of an outbreak of hog-cholera in the western part of New Jersey.

Dr. W. Runge, of Newark, New Jersey, has been sent by the State Board of Health into the district around Newport, where anthrax has prevailed for the past month.

Dr. John M. Parker, of Haverhill, Massachusetts, President of the Massachusetts State Veterinary Medical Association, has been at the Pasteur Institute, New York City, undergoing treatment as a safeguard against the effects of a bite.

Dr. J. C. McNeil has been appointed City Veterinarian for Pittsburg, a position now of much importance in that city, as it places the selection and sale of all horses under his direction, thus concentrating responsibility as to the proper selection as well as the general condition of the same on the veterinarian.

Dr. D. McEachran, of the Veterinary Department of McGill University, will address the Convention of Veterinary Faculties of North America at Des Moines on the topic of a "Uniform Title for Veterinarians." We are glad to know that we are going to be favored with the presence of Dr. McEachran at the meeting of the U.S.V.M.A.

Prof. John W. Adams will prepare a paper for the coming meeting of the Pennsylvania State Veterinary Medical Association at their meeting at Cresson Springs on September 3, 1895.

SOCIETY MEETINGS AND PROCEEDINGS.

U. S. V. M. A.

Under the head of Society Proceedings we publish a brief prospectus of the coming Missouri State meeting at Moberly on September 4th. Surely the programme should attract a large attendance, and preceding the coming national meeting in their midst, the election of a delegate, and a large representation at Des Moines, add additional importance.

Kansas City and vicinity will be well represented at Des Moines. We hear little from St. Louis, Mo., in regard to the national meeting. The Association has some very old and earnest members in that city, and they should all be present at this meeting in their midst. Distance will lend no excuse this year.

Professor S. J. J. Harger, of the Committee on Contagious Diseases, will summarize those which have been prevalent in Pennsylvania the past year, and to which will be added "Remarks Upon Recent English and Continental Investigations of Contagious Diseases," all of which will be interesting news to the members of the Association.

Chairman Butler, of the Prize Committee, desires to announce that all original papers submitted for the annual prize offered by the Association shall be sent addressed to him at Agricultural College, Mississippi; these papers to be sealed and marked in the usual manner.

Professors Gill, Huidekoper, and possibly Huddleston, of the New York Veterinary College, will be among the party out by the B. and O. that leaves Philadelphia at 7.55 A.M. on the morning of the 7th of September.

New York promises to be well represented at the meeting in Des Moines. The meeting of the State Association in New York on September 5th and 6th will give impetus to the interest and number present.

Alabama, Virginia, District of Columbia, Mississippi, Maryland, and Delaware will lead as representatives below Mason and Dixon's line.

Kansas, Missouri, Iowa, and Illinois will form a strong contingent numerically at the coming meeting.

Secretary Ramsey, of Missouri, is doing very earnest work among the veterinarians of that State, in view of the coming meeting of the Association at Des Moines.

Buffalo seems to have no competition for 1896. She deserves an unchallenged field.

Secretary Piatt, of the Missouri State Veterinary Association, is looking forward to the largest meeting of their organization that they have had, at Moberly, Mo., on September 4th, and this promises to inure to the benefit of the meeting at Des Moines.

Vice-President Turner says that Western veterinarians, or those beyond the Mississippi, look forward with a great deal of pride and pleasure to what they can consider really the first Western meeting of the U. S. V. M. A.

Treasurer Robertson, the faithful watchdog of the treasury, promises to be early on the grounds to direct his little boomlet for the Pacific Coast in 1897.

How many of the old guard of 1890 and 1893 will be on hand to renew the pleasures and social enjoyments to Chicago and the West, that made merry the hours and pleasant the memories of former journeys to our Conventions?

The Kiamensi quartette, under the leadership of Messrs. Faust and Foelker, will again conduct the musical festivities on the outward-bound passage to Des Moines.

Ex-Secretary Turner, in his official migrations, is doing yeoman work for the success of the meeting at Des Moines.

It is earnestly requested that all veterinarians from the East travelling to Des Moines will endeavor to be in Chicago on the afternoon of the 8th of September to join the party travelling by the B. and O. from Philadelphia to join in the reception and luncheon tendered by the McKillip Veterinary College.

Arrangements have been made whereby the tickets from Philadelphia, by special party over the Baltimore and Ohio, will be made good to return until the 20th of September.

If all our members were as active in missionary service for the success of the Des Moines meeting as Vice-President Turner we would have an awakening among the profession that would be a rare experience in our meetings.

Secretary Pearson announces the granting of the usual one and one-third rates by the Western, Southern, and Central Traffic Association for the delegates to the meeting at Des Moines.

It is expected that Dr. T. D. Hinebauch will again take up the subject of "Millet Disease" at Des Moines, a subject well considered by him at Chicago in 1893, and of the cause of which he had not arrived at definite conclusions.

The subject of "Professional Charges" will be considered in a paper by Professor R. P. Huidekoper at the 1895 meeting. A great deal of interest will be attached to this announcement, owing to the very exalted views of the worth of professional veterinary services entertained by the writer, in addition to the great importance of the subject in the present depressed and demoralized condition of animal industry.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THE last meeting for the session of 1894–95 was held at the Runnymede Club, Lansdowne, June 11, 1895, by invitation of Dr. Rhoads, and was well attended.

In the absence of President Lintz, Dr. Bridge presided. After the roll-call and reading of the minutes of the May meeting, Dr. U. S. G. Beeber, of Kutztown, was elected to membership.

Dr. John R. Hart was appointed to draft a letter to the Governor regarding appointments on State Veterinary Medical Examining Boards.

This being the last meeting of the current year, the regular routine of business and literary exercises was dispensed with, and the evening devoted to general business topics and social enjoyment.

Those present were U. S. G. Bieber, J. L. Bradley, F. Bridge, A. O. Cawley, C. T. Goentner, W. H. Hoskins, J. D. Houldsworth, H. J. McClellan, B. F. Sensemen, and W. L. Rhoads.

After a very pleasant evening the meeting adjourned, to meet at the office of Dr. W. H. Hoskins, September 17, 1895.

W. L. RHOADS,
Secretary.

[The Association will resume its regular monthly meetings on September 17th. Reports of her delegates at Cresson Springs, on the 3d, and at Des Moines, Iowa, on the 10th, 11th, and 12th, will be received; the winter's work will be planned, and matters of much importance to the welfare of the profession will receive consideration.]

PENNSYLVANIA ALUMNI ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE.

THE first annual meeting was held at the Runnymede Club, Lansdowne, June 11, 1895.

In the absence of Dr. Allen (who was elected Chairman at the preliminary meeting held at the office of Dr. Hoskins, February 12th), Dr. Goentner was elected Chairman *pro tem.*

. After the reading and adoption of the minutes of the February meeting, the merits of a State Alumni Association were discussed, thus bringing forth its advantages to the school and the profession, as well as to the men individually.

Officers were then nominated for the ensuing year. There being no contest, the Secretary was instructed to cast the following ballot: *President*, W. L. Zuill, Philadelphia. *First Vice-President*, Charles T. Goentner, Bryn Mawr. *Second Vice-President*, U. S. G. Bieber, Kutztown. *Secretary-Treasurer*, W. L. Rhoads, Lansdowne. *Executive Committee*, W. H. Hoskins and F. S. Allen, Philadelphia; A. O'Cawley, Milton; H. J. McClellan, Lansdowne; J. L. Bradley, Mercersburg. The Executive Committee were instructed to draft by-laws, etc.

The meeting was well attended, and after a sumptuous repast adjourned to meet at the call of the chair.

DR. W. L. RHOADS,
Secretary.

WYOMING VALLEY VETERINARY MEDICAL ASSOCIATION.[1]

THE regular monthly meeting was held in Scranton, Friday evening, July 26th, at the rooms of the Y. M. C. A. Members present were Dr. Butterfield, President, Montrose; Dr. Church, Secretary, Luzerne; Drs. Helmer and Sturge, Scranton; and Dr. Timberman, Wilkesbarre. The minutes of the last meeting were read and approved.

This was a very interesting meeting, the members seemed to make up in enthusiasm what they lacked in number. A motion to discontinue monthly meetings and to hold quarterly meetings instead elicited considerable discussion, in which a lively and general interest in the life and success of the Association was clearly brought out, each member present seeming to have a desire to do the best for the prosperity and success of the Society. It was the general opinion, however, that the meetings would be better attended if held quarterly, and it was therefore ordered that the meetings should hereafter be held quarterly instead of monthly. The Secretary was ordered to have postal cards printed in such form as to include notice of meeting and programme, to be sent out at least two weeks prior to meeting, and that the Committee on Essays and Papers appoint at least two essayists, to be notified a month prior to meeting.

Dr. Butterfield reported a case of urethral obstruction in a yearling bull, Dr. Sturge an unusually interesting case of melanosis, and Dr. Timberman a case of ruptured diaphragm due to the animal getting fast in his stall during the night.

Adjourned to meet at Dr. Butterfield's farm, South Montrose, on the last Friday in October, at which the doctor promises to have a clinic. This meeting will probably include an afternoon and evening session.

MISSOURI STATE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting will be held at Moberly, September 4, 1895. Among others the following papers will be presented for discussion: "Tetanus in the Ox," by Dr. T. B. Howard; "Points in Practice," by Dr. J. H. Wattles; "Corn-disease," by Dr. L. E. Booth; "Variations of Opinions," by Dr. L. M. Klutts; "The State Sanitary Veterinary Service," by Dr. T. E. White. These will be followed by others of equal interest and importance.

The convention will be held in the City Hall, and the members will be welcomed by Mayor Willard Cave, who, will be responded to by Dr. Wolf, of Kansas City, or Dr. Ellis, of St. Louis, and, after the routine work, the papers will be read.

The Secretary, Dr. H. B. Piatt, St. Louis, says in his announcement: "At the meeting some one will lead the discussion on each subject. We would ask your assistance in this work, thereby enabling us to keep in good fellowship, brighten up our corroded memories, renew old ties, and demolish any and all local or general jealousies that may have previously existed, and hope to see you with us."

[1] Reported for the JOURNAL by Dr. J. H. Timberman.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

THE next semi-annual meeting will be held at the Mountain House, Cresson, September 3d, arrangements having been made with Superintendent W. R. Dunham.

The following gentlemen will read papers: Dr. James Waugh, on "Peracentesis Abdominalis;" Dr. Otto Noack, on "Trichinosis;" Dr. W. L. Rhoads, on "Pathogenesis and Development of Diseases;" Dr. Jacob Helmer, on "Physical Diagnosis," and Dr. Charles Bland (title not given.) There will be reports of cases, etc., by other veterinarians.

Trains will leave Philadelphia 7.00 A.M. and 12.25 P.M., and arrive at Cresson 4.26 and 8.28 P.M. Will leave Cresson 1.00 and 8.12 P.M., arriving at Philadelphia 11.15 P.M. and 4.30 A.M. Round-trip tickets from Philadelphia to Cresson, good until October 31st, are sold at $12.55.

About twenty members have responded to notices sent out. A very fair attendance for a midsummer meeting is expected.

NEW YORK STATE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting will be held at the New York College of Veterinary Surgeons, New York City, on the 5th and 6th of September next.

Among the important papers to be read will be one by Dr. Claude D. Morris, of Pawling, N. Y., on "Veterinary Sanitation;" Dr. Anderson Crowforth, of Lockport, N. Y., on "Acarus Demolex Folliculorum." Among those who are expected to read, but whose subjects have not been announced at this writing, are Drs. John Wende, Bell, L. E. Willyoung, and Professor Law.

A part of one day will be devoted to the performance of several operations. Arytenectomy will be performed by Professor S. J. J. Harger, of Philadelphia.

IOWA STATE VETERINARY MEETING.

THE eight annual meeting will be held at the Savery Hotel, Des Moines, on September 9th. The Secretary has sent out a very attractive prospectus for this meeting, and encloses a strong and cordial invitation to attend the U. S. V. M. A., which follows the State meeting on the 10th, 11th, and 12th.

Protective veterinary legislation will be among the subjects discussed, and better sanitary laws from a board of health point of view will be considered. After very important committee reports, papers will be read by Drs. S. H. Kingery, of Creston, Iowa, and W. L. Williams, of Bozeman, Montana. Dr. J. C. Schrader, President of the State Board of Health, will lead the discussion on sanitary legislation. A very large attendance is expected.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

THE meeting of this Society that was announced for August 14th, at Chippewa Falls, was countermanded, and no meeting will be held until the annual meeting in February, 1896. The general lack of professional prosperity and the expense of members, incidental to the meeting, are given as influencing causes for this decision.

THE CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION will meet on September 10, 1895, at Sacremento, and it will be in order for this Association and the national organization to exchange greetings. We had hoped to have a copy of the programme to announce with this number, but we are forced to go to press without it.

AMONG THE COLLEGES.

OHIO VETERINARY COLLEGE.

The announcement for 1895–96, states that students entering after January 1, 1896, will be compelled to enter for a three-years' course. We are sorry that this restriction could not have been enforced at the opening of the session, but will rejoice that it is to be a definite feature of the future course of the college. Thomas King, D.V.S., succeeds Dr. Neil B. Jones as professor of theory and practice of veterinary medicine. J. Francis Jones, B.Sc., V.S., M.D., succeeds Dr. Leslie A. Wright as professor of materia medica and therapeutics. Dr. Louis P. Cook, D.V.S., succeeds Dr. Francis Jones as professor of surgery. A. H. Logan, V.S., succeeds Dr. George W. Butler as professor of obstetrics and cattle pathology.

ONTARIO VETERINARY COLLEGE.

No changes will be made in the faculty the coming year. The session commences October 16, 1895, and ends the latter part of March, 1896, a period of five and a half months, during which time the various examinations are conducted. We are sorry to note the continuation of the feature

that those who fail to pass the matriculation examination will be allowed to pursue their studies, specially so when the extent of the examination is covered by reading, writing, and spelling. The publishing of the list of examination questions is a good feature, and imparts a general idea of the scope of instruction. The insertion of promiscuous advertisements in the college catalogue rather detracts from its scientific aspect.

VETERINARY DEPARTMENT, DETROIT COLLEGE OF MEDICINE.

This school announces on the cover-page of its catalogue that the course this year will last seven months, while on page 8 they state that the session shall continue six months. L. E. Schell, M.D., professor of animal physiology, has been succeeded by S. S. Shields, M.D. M. L. High, M.D., V.S., has been added to the teaching staff as professor of materia medica and therapeutics. A course on horseshoeing has been added, to last three months. No changes are noted in the matriculation examination or requirements for graduation.

NATIONAL VETERINARY COLLEGE,

The fourth annual announcement has just been received and the following changes are noted in the faculty: George Jobson, V.S., house surgeon, professor of anatomy and theory of shoeing, has been succeeded by Wm. P. Fink, D.V.S., graduate of the Class of 1895, as professor of anatomy, the theory of shoeing having apparently been discontinued. Prof. Dawson has added to his chair the subject of bacteriology, which was formerly taught by Dr. Theobald Smith as a special lecturer. Chas. R. Clarke, M.D., has been added to the corps of instructors as professor of histology. C. F. Hadfield, D.V.S., graduate of the Class of 1895, has been added, under the head of special lecturers, as demonstrator of anatomy. The subject of canine practice appears to have been dropped from the subjects taught.

The course commences on October 3, and the final examination commences April 6. We note no change in the marticulation examination. The didactic lectures commence at 5.30 P. M. each day and end at 9.30 P. M. The clinical lectures and demonstrations from 9 A. M. to 12 noon.

The following has been eliminated from the requirements for graduation: Candidates who fail to pass in three branches or less will be permitted to present themselves for an examination in those branches during the Christmas holidays following. If successful in this midwinter-term examination their diplomas will be granted at that time.

Under the head of a three-year graded course recommended by the faculty, the important statement is made that, while this course is now an optional one, after the coming session it will be made obligatory, in order to make eligible those students who wish to practise in States having laws regulating practice. No fees are charged for the optional third-year course.

A post-graduate course will be established in connection with the coming session, where the subjects of contagious diseases, meat inspection, sanitary police, special therapeutics, bacteriology, immunization, general and special pathology, histology, comparative osteology and myology, chemistry and toxicology, zoötechnics, and special economic botany. These lectures are designed for veterinary graduates, and a certificate of attendance will be granted. The fee for this course has been placed at $75.

CHICAGO VETERINARY COLLEGE.

The session of 1895–96 will commence on October 3, and extend to the last week in March, a course of six months, for two years, inclusive of examinations. We note no change in the matriculation examination nor requirements for graduation. Several changes and additions are noted in the faculty for the ensuing year.

Dr. F. S. Billings, professor of general pathology and microscopic anatomy, is succeeded by Arthur P. Edwards, M.D., instructor in medicine and physical diagnosis, Northwestern University Medical School.

Dr. A. H. Baker relinquishes the chair of cattle pathology and is succeeded by M. R. Trumbower, D.V.S., State veterinarian of Illinois, who will also instruct in the subject of meat and milk inspection.

A. McBride, M.D.C., assistant to the chair of theory and practice, has been succeeded by P. L. Darcey, M.D.C., Class of 1894.

We note the title of M.D.C. after the names of Prof. A. H. Baker and F. S. Billings, neither of whose names appear in the list of graduates, the former having received his veterinary degree at the Montreal Veterinary College. In the announcement of 1894–95 the letters M.D.C. appear after the name C. E. Sayre, professor of dental surgery, while the announcement of 1895–96 designates the letters D.V.S. Dr. Sayre is a graduate of the Chicago Veterinary College, class of 1887. J. F. Ryan, professor of helminthology, is noted by the letters M.D.C., though he does not appear as a graduate of the Chicago Veterinary College. We were under the impression that he also was a graduate of Montreal, class of 1877. This confusion of titles makes one wish that there was a single uniform degree for veterinary graduates in North America.

AMERICAN VETERINARY COLLEGE.

The session of this school commences October 1 and ends the latter part of the succeeding March, a period of twenty-two weeks, inclusive of holidays and examinations. We note no change in the matriculation examinations or requirements for graduation. The course of study has been more thoroughly graded than in previous years and the instruction imparted to the students in a more systematic manner. J. B. Stein, M.D., has been added to the teaching-staff as professor of physiology. Herbert Neher, D.V.S., has been added to the adjunct faculty as lecturer on external forms of the horse and zoötechny.

SUGGESTIVE OF A SMILE.

THE desk of Post Veterinary Surgeon Hunter, of Fort Leavenworth, Kansas, bears two placards, giving the following terse information:

THIS IS NOT THE POST HOSPITAL.	WE ARE OUT OF ALCOHOL, CAUSTIC, AND BLUE OINTMENT.

Dr. Sesco Stewart asked a student to describe the "phenomena of an animal sweating blood." The student having missed the lecture on that subject, answered that he "believed it was caused by the animal being obliged to take an examination in helminthology."

WORLD'S PROGRESS.

VETERINARIANS will be glad to learn of the early addition to veterinary literature of two excellent works, one on *General Pathology*, covering the various fields of causation of diseases, by that eminent student, careful investigator and writer, Professor H. J. Detmers, of Columbus, Ohio.

A second work on *Pathology* by Professor J. H. Huddleston, of the New York Veterinary College. Dr. Huddleston, while not so well known as yet to the veterinary profession, is one of the most earnest, interested instructors in veterinary science in the East. A patient, earnest, and thorough investigator, a fluent writer, and no doubt will make a very welcome contributor to our libraries.

The outbreak of rabies in Allegheny County has extended during the past few weeks, necessitating the destruction of a number of horses, mules, and cows, in addition to a large number of dogs. The owner of one dog, bitten by his rabid pet while endeavoring to chloroform it, has gone to the Pasteur Institute at New York City for treatment.

WELLCOME LIBRARY INSTITUTE

Imperial "Hygenique" Fluid

Nature's Disinfectant.

EXHILARATING DEODORIZER

ANTISEPTIC AND GERMICIDE

Powerful.

Non-Poisonous.

Economical.

Invigorating.

TRADE MARK.

An *Effective Antiseptic*, having valuable *Medical Properties* also.

KILLS PARASITES ON ALL ANIMALS.

MANUFACTURED BY

THE IMPERIAL HYGENIQUE FLUID CO.,

61 Beekman Street, New York.

SAMPLES FURNISHED ON APPLICATION.

Shipping Horses.

Always have something to put on wounds. Phénol Sodique arrests inflammation immediately. Natural healing follows.

Equally good for all flesh.

If not at your druggist's, send for circular.

HANCE BROTHERS & WHITE, Pharmaceutical Chemists, Philadelphia.

Look out for counterfeits. There is but one genuine. Better cut the advertisement out and have it to refer to.

HARVARD UNIVERSITY

School of Veterinary Medicine.

The course is a *graded* one of three years of nine months each. There are unequalled facilities for practical instruction in all branches; and the Hospital, maintained in connection with the School, places a large practice under the constant observation of students.

For illustrated catalogue, and all further information, apply to

CHARLES P. LYMAN, F.R.C.V.S., DEAN.

Graduates of this School are eligible for membership in the United States Veterinary Medical Association.

OHIO VETERINARY COLLEGE

CINCINNATI, OHIO.

Incorporated under the Laws of the State of Ohio.

Special Attention Given to Practical Instruction.

SESSION OF 1895-96 COMMENCES OCTOBER 9th.

For further information, apply to

THOS. KING, PRINCIPAL,

14 and 16 Gano St., Cincinnati, Ohio.

University of the State of New York.

American Veterinary College

139 & 141 WEST 54th STREET, NEW YORK.

Incorporated and Organized 1875, under the General Laws of the State of New York.
Re-incorporated and Re-organized 1888 by Special Act of the
Legislature of the State of New York.

This School has a graded course of instruction which extends *over three years.* The Sessions open in the first week of October of each year. Besides the general curriculum, practical instructions with Laboratory work are given in Chemistry, Toxicology, Histology, Surgical Pathology, Bacteriology, Minor and Major Operative Surgery. For the new catalogue and further information apply to A. Liautard, M.D., V.M., Dean.

University of the State of New York.

New York College of Veterinary Surgeons

AND

SCHOOL OF COMPARATIVE MEDICINE.

CHARTERED 1857.

The Course of Instruction is Graded and Extends Over Three Years of Six Months Each.

During the past year many improvements have been made. The School has moved into a new building, the Hospital accommodations have been enlarged, new Laboratories for practical instruction in Histology, Chemistry and Bacteriology have been equipped, and the number of Courses given has been materially increased. For circular giving detailed information, apply to

H. D. GILL, V.S., Dean.

154 East 57th Street., NEW YORK CITY.

THE KANSAS CITY VETERINARY COLLEGE,

310 EAST TWELFTH STREET,

KANSAS CITY, MISSOURI.

Applicants for admission must conform to the rules adopted by the Association of College Faculties of North America. Catalogues sent on application to the Secretary.

JUNIUS H. WATTLES, D.V.S.

UNIVERSITY OF PENNSYLVANIA.

VETERINARY DEPARTMENT.

The course of instruction is graded and extends over three years, with one session beginning the 1st of October and ending the last of May in each year.

Practical instruction, including Laboratory Work in Pharmacy, Chemistry, General Biology, Histology, Physiology, Comparative Osteology, Dissecting, Botany, Pathology, Bacteriology, and Inspection of Meat and Milk, with personal care and treatment of animals in the hospital and clinics, is part of the regular course without additional expense. *For Catalogue, address*

JOHN MARSHALL, M. D., *Dean of Veterinary Faculty.*

Cor. 36th and Pine Streets, Philadelphia.

McKILLIP VETERINARY COLLEGE,

CHICAGO.

The course of instruction commences in October and extends over three years with six months duration.

The course is based upon a broad, scientific and practical curriculum.

It affords students the advantage of work in the routine business of the largest practice in this country. Students who wish to enter the college must have the pre-education agreed upon by the ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA. For catalogue and information apply to

Prof. OLAF SCHWARZKOPF, Dean,
1639 Wabash Ave., Chicago.

UNITED STATES COLLEGE OF

VETERINARY SURGEONS,

222 C Street, N. W., Washington, D. C.

SESSION 1895-96 BEGINS OCTOBER 1st.

FOR PROSPECTUS AND FULL INFORMATION, ADDRESS

C. BARNWELL ROBINSON, V.S., Dean.

THIOFORM

AN ODOURLESS SUBSTITUTE FOR IODOFORM

Sole Agents for the United States of America

OTTO HANN & BRO.,

268 Water Street, N. Y.

☞ All the authorities point out the following advantages in THIOFORM:—1. Its odourlessness. 2. Its great antiseptic action. 3. Its desiccative action. 4. The absence of irritant or toxic properties. 5. The power of alleviating pain. 6. Its styptic action.

Why let your Calves die of

BLACK LEG

when it can be **Prevented** by **VACCINATION,** which is harmless, simple, and economical. Send for particulars

Pasteur Anthrax Vaccine (U. S. & Canada) Company, Ltd.,
369 Broadway, New York.

Anthrax, Black Leg, Splenic Fever, etc.,

cause stock owners very heavy losses, which can be surely avoided by

PREVENTIVE VACCINATION.

It is simple, harmless and inexpensive. If particulars are desired write to

Pasteur Anthrax Vaccine (U. S. & Canada) Company, Ltd.,
369 Broadway, New York.

PLANTEN'S

For Oral and Rectal Medication.

Improved Empty Veterinary CAPSULES

ORAL: ½, 1, 2, 3, 4, 8 and 12 drachms. RECTAL: 1½, 1, and ½ ounce.

TRIAL BOX BY MAIL, 25 CENTS.

CAPSULED HORSE BALLS. We make a specialty of putting up Private Formulas.

ESTABLISHED 1836.

H. PLANTEN & SON, 224 WILLIAM STREET, NEW YORK.

C. M. MOSEMAN & BRO.

SOLE AGENTS FOR

ELLIMAN'S EMBROCATION,
COLES OSSIDINE,
MANHATTAN OINTMENT,
PERRINS LEG WASH,
STEVENS OINTMENT,
LT. JAMES BLISTER,
KITCHELLS LINIMENT,
QUINN OINTMENT,

All the Celebrated Preparations of W. Clark, of Oxford Street, London,

AND ALL OTHER GOOD

Horse Remedies of English, French and American Production.

EVERYTHING FOR YOUR HORSE—AND QUICK.

WAREROOMS, 128 CHAMBERS STREET, NEW YORK.

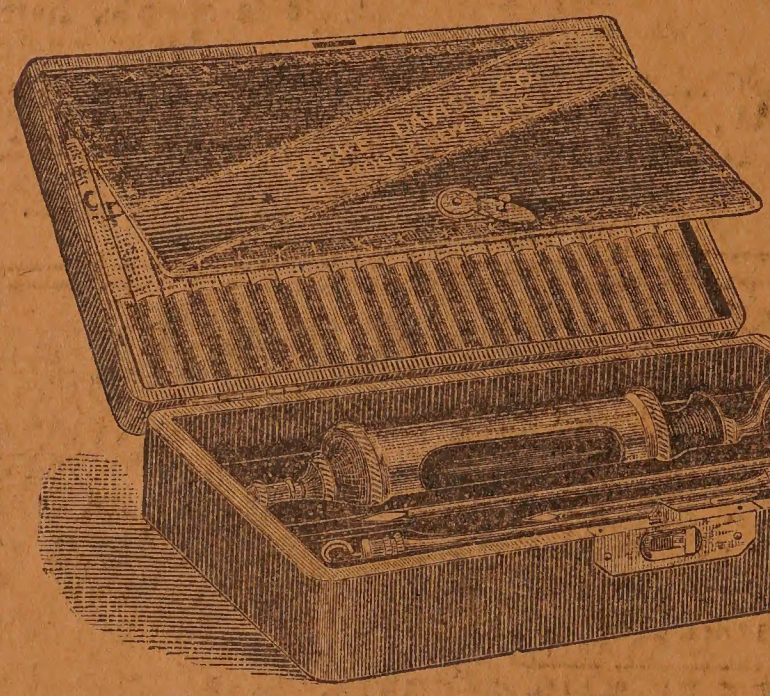
Convenient Preparations for Veterinary Practice.

HORSE BALLS, LOTIONS, LINIMENTS AND POWDERS.

We are prepared to manufacture coated or uncoated *Horse Balls* from private or special ormulæ of every description. Many veterinary surgeons have favorite prescriptions which they administer largely in their practice, and the cost of putting up of which—in limited quantities and without facilities—is somewhat excessive. We are in a position to supply all such formulæ in quantities upon reasonable notice, and at very low rates: whether they are desired in the form of Horse Balls, Lotions, Liniments, Powders or otherwise. We use no inferior materials; our processes of manufacture are the best and latest improved.

Private prescriptions entrusted to us for estimates or manufacture are held in strictest confidence; the formulæ, being regarded as the property of their owners, are never disclosed to any one.

IMPROVED VETERINARY HYPODERMIC CASE.



CONTENTS OF CASE.

1. A Graduated veterinary hypodermic syringe of improved construction.
2. A hypodermic needle.
3. A hypodermic trocar needle.
4. A hypodermic trocar.
5. A complete list of hypodermic tablets, put up in tubes of 12 tablets each.

ANTISEPTIC AND DISINFECTANT PREPARATIONS.

We have a full line of this class of preparations adapted for use in every condition in which antiseptics or disinfectants are indicated, and will be pleased to furnish complete descriptive circulars.

We may especially mention Antiseptic liquid, a combination of the chlorides of aluminium, sodium, magnesium, calcium and zinc, with oils of Eucalyptus globulus and Gaultheria procumbens. It is admirably adapted for use about stables, cellars, out-houses, etc.

WITCH HAZEL AND CHAULMOOGRA OIL.

The distilled extract of witch hazel has long been known to be a valuable remedy applied locally for relieving pain and subduing inflammation in wounds and contusions. Our product will be found of uniform strength and purity.

Chaulmoogra Oil is very largely used abroad for local application in stiffness, lameness and to prevent the development of these conditions after severe muscular exertion, as in hunting or racing.

Complete descriptive circulars and any desired information regarding our products promptly furnished on application.

PARKE DAVIS & CO., Manufacturing Chemists, DETROIT, MICH